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ARIZONA STATE UNIVERSITY ■ COLLEGE OF BUSINESS
CENTER FOR BUSINESS RESEARCH

Valley Inflation Moderates in Third Quarter

Inflation in the Phoenix metropolitan area slowed to a seasonally adjusted 0.9 percent rate during third quarter 1988, down from a 1.3 percent rate in the second quarter. The third quarter's rate was similar to those recorded between second quarter 1987 and first quarter 1988 (see Table 1).

Before seasonal adjustment, the Metropolitan Phoenix Consumer Price Index rose only 0.8 percent, much less than the second quarter's 2.1 percent advance. The third quarter 1988 index was 120.9 (1982-84 = 100), 4.1 percent higher than in third quarter 1987.

The third quarter's inflation rate was lower than anticipated. Even if inflation during the fourth quarter returns to the second quarter's 1.3 percent seasonally adjusted rate, the annual average rate for 1988 will be no higher than in 1987. Fears of higher inflation in the near term appear to have been overblown.

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COMPONENT INDEXES

Despite its minor relative importance, the category of apparel and upkeep contributed as much to the overall inflation rate as the more heavily weighted categories of housing, transportation, and food and beverages. Moderate inflation was measured during the third quarter in each of the other major categories.

Food and Beverages

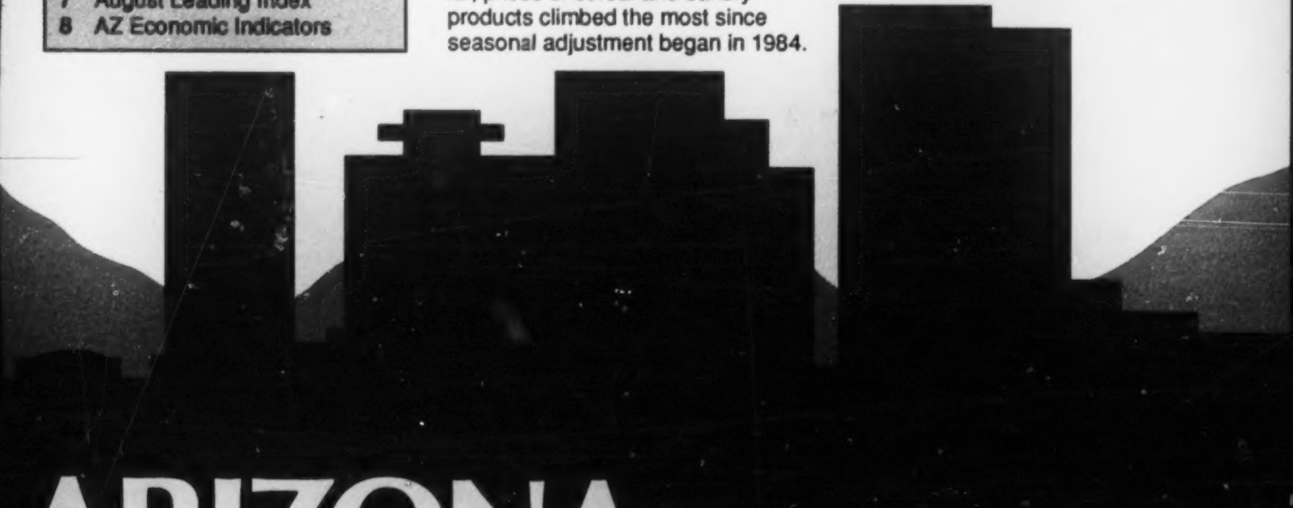
Though the third quarter's inflation rate was less than in the second quarter, it was higher than in each of the six quarters between late 1986 and early 1988. The summer's drought appears to have had an effect on food at home prices, which rose more than prices of food away from home (see Table 2). In particular, prices of cereal and bakery products climbed the most since seasonal adjustment began in 1984. Mostly because of jumps in prices of eggs and poultry, inflation in the meats, poultry, fish and eggs category was relatively high for the second straight quarter.

Housing

Housing inflation remained modest during the third quarter. After some increases last winter, apartment rents resumed their decline as the market remains plagued by overbuilding and weak demand. Similarly, homeowners' costs have been rising modestly. Thus, shelter costs, which make up 28 percent of the CPI, continue to hold down the area's inflation rate, a result of weak population and economic growth.

Transportation

Transportation inflation again was moderate during third quarter 1988; the increase over third quarter 1987 was only 1.2 percent. Public transportation costs plunged, offsetting the second quarter's large gain. Declining prices also were measured for used cars, automobile parts



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and equipment, and automobile maintenance and repair. Price gains were recorded for new cars, gasoline and automobile insurance.

Medical Care

Health care costs barely rose during the third quarter. Except during second quarter 1988, this category has registered little change since the first half of 1987. Prescription drug prices declined in the third quarter by the most in years while rates for professional medical services and hospital and related services hardly advanced; the latter's increase was the smallest since early 1985.

Other Categories

Apparel and upkeep costs jumped for the third consecutive quarter and fifth time in six quarters. The annual increase through third quarter 1988 was 8.5 percent, with double-digit rates measured for women's apparel, girls' apparel, footwear and infants' apparel. The indexes for entertainment and other goods and services went up modestly.

COMPARISON AREAS

Before seasonal adjustment, inflation in the Phoenix area was lower than the national average in the third quarter (see Table 3). In each major category except apparel and upkeep, the Phoenix area rate was less than or equal to the national average.

During the year ending third quarter 1988, inflation in the Phoenix area was nearly equivalent to the national average. After experiencing higher inflation during the boom years of 1984-85, Phoenix area inflation has tracked the national average.

OUTLOOK

With only one quarter of the year remaining, the 1988 annual average rate of inflation in the Phoenix area is unlikely to be much different from 4 percent, about equal to the 1987 rate and the rate predicted for 1988 at the beginning of the year. Some acceleration in the inflation rate seems likely for 1989, with year-over-year rates briefly exceeding 5 percent before settling at between 4.5 and 5 percent. The sluggish economy, however, may hold rates near those of 1987 and 1988.

– **Tom R. Rex**
Research Manager

TABLE 1
PERCENT CHANGES IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Seasonally Adjusted from Preceding Quarter						
Expenditure Category	*Relative Importance*	*1st 1987*	*2nd 1987*	*3rd 1987*	*4th 1987*	*1st 1988*	*2nd 1988*	*3rd 1988*
ALL ITEMS	100.0	2.1	1.1	0.7	0.9	0.8	1.3	0.9
Food and Beverages	16.4	–0.2	0.5	0.9	0.6	0.9	2.0	1.3
Housing	42.4	0.5	0.2	0.5	2.3	1.0	0.2	0.4
Apparel and Upkeep	5.8	–2.5	2.8	2.7	0.3	2.3	2.9	3.6
Transportation	19.1	3.1	3.8	0.9	-2.0	-0.5	2.4	1.0
Medical Care	6.7	1.8	2.7	–2.1	0.9	0.3	3.3	0.4
Entertainment	4.6	2.4	–1.2	2.0	3.1	1.2	0.1	1.2
Other Goods and Services	5.0	2.0	0.3	2.9	0.6	2.2	0.9	0.8

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
Third Quarter 1988

	Index (1982-84 = 100)		Percent Change from	
Expenditure Category	*Last Quarter*	*This Quarter*	*Last Quarter* *	*Year-Ago Quarter*
ALL ITEMS	119.9	120.9	0.9	4.1
Food and Beverages	119.3	120.4	1.3	4.7
Food	118.2	119.3	1.6	4.1
Food at Home	119.7	121.1	1.6	5.0
Cereal and Bakery Products	131.3	138.3	6.1	10.3
Meats, Poultry, Fish, and Eggs	111.5	114.6	2.2	5.8
Dairy Products	113.1	112.0	–0.3	2.4
Fruits and Vegetables	146.3	145.7	3.0	17.8
Other Food at Home	112.4	112.4	0.1	–2.8
Food Away from Home	116.7	117.4	1.2	3.5
Housing	115.5	116.9	0.4	4.5
Shelter	115.0	115.6	0.3	2.8
Renters' Costs**	119.1	118.7	–1.2	1.8
Homeowners' Costs**	117.2	118.3	0.9	3.3
Fuel and Other Utilities	120.5	122.7	0.0	6.6
Gas (piped) and Electricity	116.1	125.9	4.7	12.4
Household Furnishings/Operations	113.0	115.6	1.6	5.8
Apparel and Upkeep	119.8	120.7	3.6	8.5
Transportation	117.1	117.2	1.0	1.2
Private Transportation	116.5	118.1	2.7	1.7
New and Used Cars	128.6	130.3	.8	7.0
Motor Fuels	76.4	77.2	7.2	–9.1
Public Transportation	116.2	107.0	–9.3	–0.7
Medical Care	146.0	147.0	0.4	5.3
Entertainment	138.6	139.7	1.2	8.8
Other Goods and Services	132.1	133.4	0.8	4.4

*Seasonally adjusted

**Base period is second quarter 1983.

TABLE 3
METROPOLITAN PHOENIX AND UNITED STATES CONSUMER PRICE INDEXES
Third Quarter 1988

	Percent Change from Last Quarter*		Percent Change from One Year Ago	
Expenditure Category	*Phoenix*	*United States*	*Phoenix*	*United States*
ALL ITEMS	0.8	1.3	4.1	4.0
Food and Beverages	0.9	2.0	4.7	4.9
Housing	1.2	1.5	4.5	3.6
Apparel and Upkeep	0.6	–3.2	8.5	2.9
Transportation	0.1	1.4	1.2	2.9
Medical Care	0.7	1.8	5.3	6.6
Entertainment	0.8	0.8	8.8	4.4
Other Goods and Services	1.0	1.8	4.4	7.0

*Not seasonally adjusted

Source (Tables 1-3): Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in co-sponsorship with Valley National Bank; other data are from the U.S. Department of Labor, Bureau of Labor Statistics.

Accuracy of Population Predictions Has Been Cyclical

Projections of the Arizona, Phoenix area and Tucson area populations during the past 30 years have alternated every few years from too high to too low, with occasional periods of accuracy in between. Thus, the perception that population gains have consistently been underprojected—an explanation offered for the much higher official projections since late 1986—does not appear to be accurate.

The periodicity of projection accuracy largely relates to the sharp cyclicality in population flows and economic growth. Throughout the last 30 years, the most recent performance tended not to be viewed as strictly cyclical behavior, but was weighted too heavily and extended throughout the projection period.

Over time, the population projections have been slightly low for Maricopa County and barely above actual growth for the state as a whole. However, Pima County's population growth has been overprojected on average.

A HISTORY OF CYCLES

In the mid-1950s, the population in Arizona, especially in its metropolitan areas, grew much faster than at any time in its history. This rapid growth, however, had only begun a few years earlier, and thus was not ingrained in the psyche of the community. Population projections made at this time turned out to be relatively accurate for Pima County and rural Arizona, but some 10 to 15 percent too low for Maricopa County (see Figure I).

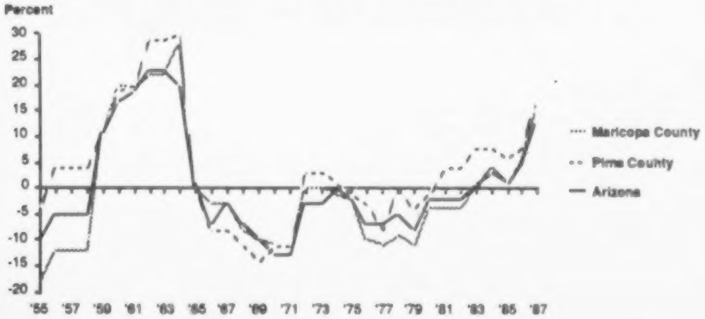
By 1960, rapid growth had been experienced for more than a decade. Optimism swept across Arizona, reflected not only in population projections, but in other aspects of decision making. Home building, for example, shot up in the early 1960s. Population projections made during the first half of the 1960s turned out to be 20 to 30 percent too high for both Pima and Maricopa counties. Rural growth prospects were more accurately assessed.

The optimism of the early 1960s led to overbuilding. Soaring vacancy rates caused the construction industry in 1963 to enter a three- to five-year-long down cycle. A slow local economy and less national migration — due to a decrease in the number of young adults — resulted in much lower population gains in Arizona during the mid-1960s.

A downward revision in the population projections resulted. In one year, projections went from 20 to 30 percent too high to accurate. But as slow growth persisted until 1969, further downward revisions in the projections occurred. By 1970, the forecasts were too low, by roughly 10 percent for the urban areas to nearly 20 percent for rural Arizona.

During the early 1970s, all of Arizona experienced a boom, one that never has been repeated outside the Phoenix area. The pessimism of the population projections disappeared. For a few years in the mid-1970s, projections were amazingly accurate for all areas of the state.

FIGURE I
APPROXIMATE PERCENT ERROR IN PROJECTIONS
OF POPULATION FIVE TO TEN YEARS IN FUTURE



Source: Center for Business Research, College of Business, Arizona State University. The past projections came from a variety of sources, including the *Arizona Statistical Review* published annually by Valley National Bank. Percent errors after 1980 are estimated.

The deep, long recession of the mid-1970s hit the Phoenix area particularly hard. This was reflected in the population projections of the mid- to late-1970s, which were about 10 percent too low for the Phoenix area, but only slightly low for the Tucson area and quite accurate for non-urban Arizona.

Improved economic conditions in the late 1970s led to higher and more accurate forecasts across the state in the early 1980s, though the Phoenix area's growth continued to be slightly underprojected while projected gains in the Tucson area were slightly too high.

A boom — mostly in the urban areas — began in the early 1980s, led by commercial construction before the 1981-82 recession had ended. Like the episode nearly 25 years earlier, optimism swept the urban areas and construction boomed. Population projections became more optimistic. Though the long-term accuracy of these forecasts cannot yet be ascertained, the error for the urban areas may be on the magnitude of 15 percent too high. An error of this size (in either direction) was exceeded historically only in the early 1960s. The error for rural Arizona probably will turn out to be only about 5 percent.

Just as in the early 1960s, the 1980s construction boom led to high vacancy rates, which contributed to a construction decline beginning in 1986. Population and economic growth have been much slower for nearly two years, and near-term population projections are being revised substantially down to reflect these conditions.

A new series of official population projections — probably much lower than the prior series — will be released in 1989. As the current economic slump — a cyclical, not a long-term, phenomenon — continues for perhaps another three or four years, the community and its population projectors should not become too pessimistic about the long-term growth prospects.

– Tom R. Rex
Research Manager

Standard of Living Subpar Through Most of Arizona

The standard of living in the Phoenix metropolitan area is near the national average for large urban areas, but living standards throughout the rest of Arizona are substantially below the average of comparably sized places. This article updates cost of living, income and standard of living information last presented in the November 1987 issue of *Arizona Business.*

NATIONAL RELATIONSHIPS

Cost of Living

Living costs vary geographically. Significantly higher costs are found in the Northeast and along the Pacific coast, while significantly lower costs are enjoyed in the Southeast and in the Great Plains states (see Table 1). Costs in the Mountain region, which includes Arizona, are near the national average. Relative to the rest of the nation, living costs were higher in the Northeast in 1987 than in 1986.

TABLE 1
MEDIAN LIVING COST INDEXES
By Geographic Area, Population of Urbanized Area, and Income
(National Median = 100)

Area	Index
New England	121*
Middle Atlantic	106
South Atlantic	100
East South Central	95*
West South Central	98
East North Central	99
West North Central	95*
Mountain	99
Pacific	105*
Population	
Less than 25,000	96*
25,000-74,999	97*
75,000-124,999	98
125,000-199,999	99
200,000-399,999	99
400,000-999,999	102
1 million or more	112*
Income	
Less than $21,500	95*
$21,500-$23,999	97*
$24,000-$27,499	100
$27,500 or more	105*

*Statistically significant difference from the national average.

Source: Center for Business Research, College of Business, Arizona State University, based on 1980 Census population figures, 1987 *Sales and Marketing Management* household disposable income figures, and 1987 data of the American Chamber of Commerce Researchers Association (ACCRA).

The cost of living has a direct relationship to the population of a place; metropolitan areas of at least one million residents endure significantly higher costs and towns with fewer than 75,000 inhabitants experience significantly lower costs.

An area's cost of living can be predicted relatively accurately by examining its 1980 population, geographic location, latest median income and 1980 median home value. In most of the nation, predicted values closely match the actual cost of living reported by the American Chamber of Commerce Researchers Association (ACCRA). In much of Arizona, however, the cost of living is higher than expected from the values of these indicators. The neighboring states of New Mexico and Nevada also have higher than expected costs but the northern Rocky Mountain and northwestern states have lower than predicted costs. The only other states with living costs much different than anticipated are Alaska and Michigan (higher) and West Virginia (lower).

Income Levels

Median household disposable income figures are correlated with living costs; they also vary directly with population in the same manner as living costs (see Table 2). Incomes vary geographically as well, but not in the same pattern as the cost of living. Significantly lower incomes are found in the South Central states; this relationship occurred in the West South Central region for the first time in 1987. Significantly higher incomes are measured in the Middle Atlantic and Great Lakes states.

Standard of Living

Calculating the ratio of income to the cost-of-living index creates a measure of the standard of living. This adjustment greatly reduces the variations in income, though significant differences remain. Living standards also increase with the population, ranging from 6 percent less than the national average in small towns to 10 percent more in large urban areas. Geographically, adjusted income ranges from 10

TABLE 2
MEDIAN HOUSEHOLD INCOME WITH AND WITHOUT COST-OF-LIVING ADJUSTMENT

Geographic Area	Income	Adjusted Income
New England	$30,025	$24,825
Middle Atlantic	26,725*	25,200
South Atlantic	23,975	23,975
East South Central	20,900*	22,000*
West South Central	22,625	23,075
East North Central	26,075*	26,325*
West North Central	24,450	25,725
Mountain	24,525	24,775
Pacific	26,875	25,600
Population of Urbanized Area		
Less than 25,000	$22,050	$22,975
25,000-74,999	23,450	24,175
75,000-124,999	23,975	24,475
125,000-199,999	24,525	24,775
200,000-399,999	25,225	25,475
400,000-999,999	26,150	25,625
1 million or more	30,100*	26,875*
NATIONAL AVERAGE	$24,525	$24,525

*Statistically significant difference from the national average.

Source: Center for Business Research, College of Business, Arizona State University, based on 1987 *Sales and Marketing Management* household disposable income figures and 1987 ACCRA cost-of-living figures.

percent less than the national average in the Southeast to 7 percent more in the Great Lakes states.

ARIZONA

Cost of Living

Not many communities in Arizona have participated in the ACCRA living-cost study. A complete list of cities for which living-cost information is available is presented in Table 3. Some surveys were done by the Center (see the November 1986 issue of *Arizona Business)*. Within the Phoenix metropolitan area, where living costs are slightly lower than expected for an urban area of its size, Chandler and Tempe — each of whom participated for the first time in 1987 — have living costs roughly equal to those of Phoenix. By category, however, some differences are apparent: costs in Tempe and Chandler are higher for housing and transportation, but lower for health care and miscellaneous. Costs in Scottsdale are higher than those in Phoenix, especially for housing and utilities.

Because of its smaller population, Tucson's costs are lower than those of Phoenix, and about equal to the national average for an area of its size. The costs of living in non-urban areas of Arizona are much higher than expected given their populations. The desert communities of Casa Grande, Lake Havasu City and Yuma have comparable living costs; although lower than in Phoenix, they are equal to those in Tucson. The northern communities of Page and Show Low, however, have costs of living higher than in the Phoenix metropolitan area.

Income and Adjusted Income

Incomes throughout the state are lower than the national average for comparably sized areas—by as much as 20 percent in the Tucson area and some rural counties, such as Mohave.

Adjusting the Phoenix area incomes by the cost of living produces standard of living figures near the national average for large urban areas (see Tables 2 and 4). In the rest of the state, however, living standards are considerably below national norms; by about 20 percent in the Tucson area and 10 to 25 percent in rural communities.

– **Tom R. Rex**
Research Manager

TABLE 3
COMPARATIVE LIVING COSTS FOR ARIZONA COMMUNITIES
Percent Difference from City of Phoenix

	Overall	*Groceries*	*Housing*	*Utilities*	*Transportation*	*Health Care*	*Miscellaneous*
Chandler	-1	+1	+3	0	+6	-15	-8
Scottsdale	+9	+3	+19	+30	+6	0	0
Tempe	0	-1	+8	+2	+2	-5	-6
Tucson	-4	0	-3	-20	-3	-11	-2
Casa Grande	-4	+3	-16	+2	+6	-14	-4
Lake Havasu	-6	+4	-21	+15	-9	-19	-4
Yuma	-5	+4	-21	+12	-4	-16	-1
Page	+4	+21	-3	-1	+5	-3	+2
Show Low	+5	+15	-1	+5	+13	+4	+2

Source: Center For Business Research, College of Business, Arizona State University from Center surveys and *ACCRA Intercity Cost of Living Index*, various issues.

TABLE 4
INCOME, COST OF LIVING, AND STANDARD OF LIVING FOR ARIZONA COMMUNITIES

	1987 Income*			1987 Adjusted Income	
	County	*City*	*Cost of Living*	*County***	*City*
Chandler	$27,403	NA	104	$26,350	NA
Phoenix	27,403	26,863	105	26,100	25,575
Scottsdale	27,403	34,288	114	24,025	30,075
Tempe	27,403	30,685	105	26,100	29,225
Tucson	21,935	19,790	101	21,725	19,600
Casa Grande	19,675	NA	101	19,475	NA
Lake Havasu	17,538	NA	99	17,725	NA
Yuma	18,724	20,681	100	18,725	20,675
Page	22,930	NA	109	21,025	NA
Show Low	21,931	NA	110	19,925	NA

*Both county and city income levels are reported since separate city figures were not available for some communities.

**County income divided by city's cost-of-living index

NA= Not available

Source: Center for Business Research, College of Business, Arizona State University based on 1987 *Sales and Marketing Management* household disposable income figures and ACCRA cost-of-living figures.

Economic Weakness Deepened in July

The economic slowdown, which began in February and spread during the spring throughout the economy and the state, continued in July. All regions of the state suffered. Preliminary data for August suggest further weakness, though slight gains may have occurred.

The coincident economic index for the Phoenix area declined in July for the second straight month (see Figure I), dipping 0.2 percent to 147.8 (1982 = 100). The index for the Tucson area fell for the third time in four months, dropping 0.5 percent to 136.9. In rural Arizona the slowdown was more severe, with a 1.3 percent plunge in July to 127.9, following three successive monthly declines.

Despite the decreases in recent months, the coincident indexes remained 2 to 3 percent higher than they were in July 1987. However, this annual change has been falling fast. Another measure of annual growth comparing the latest month to the average of the 12 prior months exhibited even greater weakness. In Pima and Maricopa counties, this rate was at its lowest level since the end of the 1981-82 recession (0.5 percent in the Tucson area, 2.6 percent in the Phoenix area). The rate was –0.9 percent for non-metropolitan Arizona, not as low as it was during 1985.

Retail sales were flat to slightly down in July in each of the three areas. The value of commercial building permits plunged in each area, reaching levels near the lows of early 1988.

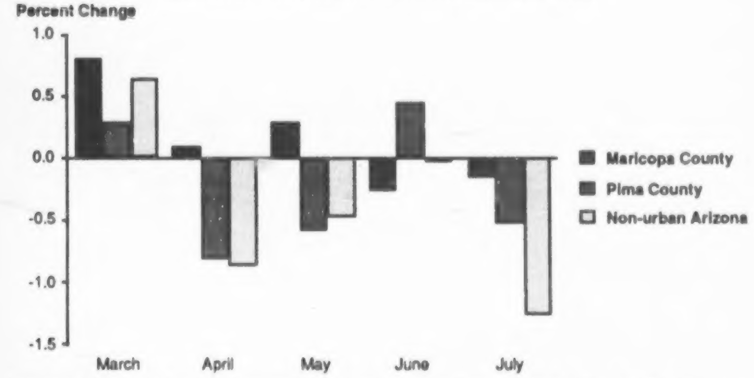
The employment variables were responsible for the differences in the magnitude of the declines across areas. The unemployment rate rose sharply in all areas, but the largest increase occurred in rural Arizona and the smallest in Maricopa County. Employment rose moderately in the Phoenix area and by a smaller amount in the Tucson area, but declined in the rural counties.

Between April and July, the cumulative change in each component of the index was negative in every geographic area, with the exception of a minimal increase in employment in Maricopa County.

The composite statewide measure declined 0.4 percent in July, dropping the index to 142.5.

– **Tom R. Rex**
Research Manager

FIGURE I
MONTHLY CHANGE IN COINCIDENT INDEXES



Source: Center for Business Research, College of Business, Arizona State University.

September Purchasing Indicators Track Slowing Growth

The growth rate of the Arizona economy slowed noticeably in September. While order books continued to expand, the increase rate was the smallest in almost two years. Growth in employment also slowed, as did the stretch-out in vendor lead times. Two positive signs were the decline in purchased material inventory and the drop in the rate of price increases to its lowest level since the first quarter.

Twenty-one percent of Arizona's firms added to inventory in September, but a larger 28 percent cut stocks, the third net decline in inventory this year. Purchases of materials and supplies by Arizona firms increased again, but at a somewhat slower rate than in August.

The actions of the Federal Reserve to increase interest rates in an effort to keep the economy from heating up to an unsustainable level seem to be working. If the efforts to curtail inflation continue to meet with success, the economy will enjoy further moderate, but predictable, growth.

TABLE 1
SEPTEMBER PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (September compared to August)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	48	50	2
Delivery time from vendors	34	57	9
Purchased materials inventory level	21	51	28
New orders received	35	40	25
Production	35	51	14
Employment	27	55	18
Purchases	38	38	24

Source: Purchasing Management Association of Arizona, Purchasing Management Association of Southern Arizona, and the Northern Arizona Group.

– **Harold Fearon**

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Leading Index Up Again in August

The Arizona Index of Leading Economic Indicators advanced to 111.4 in August, up 0.3 percent from the July level of 111.1 (1977 = 100). The August value for the index represents a new high, breaking the previous record of 111.2 set just before the stock market decline of October, 1987.

The greatest positive influence on the index came from a seasonally adjusted increase in residential building permits. Hours worked in Arizona manufacturing plants, industrial employment, delivery times, and sensitive prices, a national variable, also influenced the index in a positive direction.

A decrease in the national money supply exerted the greatest downward pull on the index. Seasonally adjusted Arizona production, inventories and orders also created a drag on the index.

RECENT MOVEMENT

The index has exhibited no brisk movement in either direction since the beginning of the year. There have been no sharp decreases of the type associated with recession. Nor have there been extended periods of strong gains. The greatest single advance in 1988 was the .5 percent increase of March, followed by a month of no change in April. Since April, however, the index has increased four consecutive months, but by very small amounts.

Three variables are of particular interest during 1988. Two of these, the national money supply and sensitive materials prices, reflect the strength in the US economy. The money supply increased steadily through the first half of 1988, buoying the index, as the monetary authorities supplied reserves to support the continued expansion of the national economy. As the overall economy continued to heat up, sensitive materials prices increased in every month since February. Money supply decreases in the past two months have undoubtedly been partially aimed at cooling these inflationary tendencies developing at the national level.

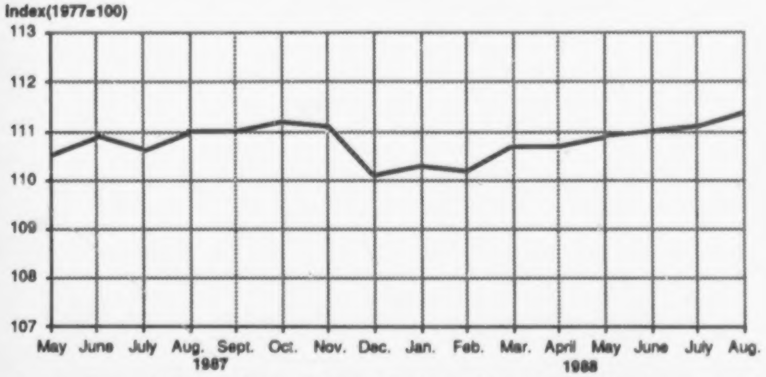
The third variable, residential building permits, is closely watched by analysts because of its typically large contribution to the index. This month, new permits registered their largest impact of the year, 0.39. Much of the strength of this component is from multifamily permits, still relatively strong so far this year in spite of record vacancy rates.

OUTLOOK

Signals from the index have been similar for the past several months. There is no significant change of economic pace in sight for the remainder of 1988 and the early portion of 1989. Arizona's economy is in low gear, moving forward and still on the right road, but at a speed of expansion much slower than that of just a few years ago.

– Lee R. McPheters, *Director*
Economic Outlook Center

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution*			
	May	*June*	*July*	*Aug.*
Delivery Time°	.08	–.13	.13	.02
Inventory Levels°	–.06	–.06	.17	–.06
New Orders°	–.07	.01	.06	–.02
Production°	.04	.03	.01	–.06
Employment°	.04	–.05	.05	.05
Residential Building Permits	.36	.03	–.23	.39
Unemployment Insurance Claims	–.23	.19	.00	.00
Average Workweek, Manufacturing	.05	–.09	–.05	.05
Money Supply	.02	.06	–.05	–.10
Change in Sensitive Materials Prices	.02	.03	.02	.01
OVERALL INDEX CHANGE (%)	.25	.01	.13	.27

*The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

°Based on indications from the purchasing management associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

The Arizona leading index is based on 10 economic indicators, combined and weighted to project the pace of economic activity several months ahead. Five of the components come from a monthly survey of Arizona purchasing managers conducted by Dr. Harold Fearon. The Arizona Index of Leading Economic Indicators is sponsored by Citibank (Arizona).

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Year-to-Date Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	1st Qtr.	59.443	2.0	9.0	NA	NA
Arizona - 1982 Dollars	1st Qtr.	49.003	1.5	4.5	NA	NA
COINCIDENT ECONOMIC INDEXES (1982 = 100)						
Arizona	July	142.5	–0.3	2.9	NA	NA
Metropolitan Phoenix	July	147.8	–0.2	3.1	NA	NA
Metropolitan Tucson	July	136.9	–0.5	2.3	NA	NA
Non-urban Arizona	July	127.9	–1.2	2.7	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	3rd Qtr.	120.9	2.1	3.8	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	August	111.4	0.3	0.4	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	July	233,904	–25	–35	1,999,989	–14
Pima County	July	32,426	–36	–38	306,099	–16
Balance of State	July	51,426	–30	–12	407,039	1
Arizona	July	317,756	–28	–32	2,713,127	–12
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	July	1,553	–42	–43	13,863	–19
Pima County	July	237	–62	–51	3,544	–14
Balance of State	July	605	–36	–22	5,661	–12
Arizona	July	2,395	–43	–40	23,068	–17
HOME SALES						
Maricopa County - Number	August	5,150	8	–17	34,475	–20
Maricopa County - Median Price	August	80,850	0	–1	80,025	0
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	2nd Qtr.	96	5.5	1.1	NA	NA
Metropolitan Phoenix - Resale Homes	2nd Qtr.	124	0.8	6.9	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	September	10.4	–1.9	–3.7	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	2nd Qtr.	2,013	0.3	2.2	NA	NA
Arizona	2nd Qtr.	3,476	0.3	2.1	NA	NA
ELECTRICAL POWER SALES (in Millions of Kilowatt Hours)						
Arizona	August	4,831	1.3	21.3	29,684	12.4

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University.

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Survey Reveals Recent Homebuyers' Preferences

Homebuyers are purchasing homes with more amenities and are obtaining most of the items they desire in a home. High quality construction and the quality of the neighborhood/area are the most important considerations for most buyers, and the majority enhance their newly acquired home by upgrading or personalizing its interior.

These are only a few of the findings which resulted from a survey conducted by the Arizona Real Estate Center examining the housing preferences of recent homebuyers. The 405 respondents to the AREC Survey had purchased their homes between August 1987 and July 1988 and answered questions about the type of home they bought as well as the features they sought and additional items they had purchased for it.

IMPORTANT HOUSING CHARACTERISTICS

The quality of the area ranked highest as an important or very important consideration when selecting the home (82 percent of respondents), followed closely by the desire to own a home rather than rent (81 percent). Other important factors included all the "money" variables: price (70 percent), investment value (66 percent), the financing plan (54 percent) and the monthly payment (51 percent). However, compared to the previous year, all the monetary variables fell in importance while the quality of the area and the desire to own a home increased in importance. The factors considered least important were the builder's reputation (28 percent), higher status associated with a move-up home or neighborhood (21 percent), and the proximity to friends and relatives (17 percent). Some housing characteristics varied in importance by the purchaser's housing type. For example, buyers of new homes, both single-family and townhouse/condominium, considered the investment value, the reputation of the builder, energy saving features and warranties to be more important than did resale purchasers (see Table 3, page 4).

Single-family (SF) buyers placed greater importance on amenities. They also considered a larger home and the school district to be more valuable, primarily since they had more children than townhome buyers. New SF buyers also considered the status of the neighborhood, energy saving features, warranties and the builder's reputation to be more important than did buyers of other housing types; they were less concerned about the distance to work. On the other hand, the number of bedrooms were more important to resale SF buyers.

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Townhouse/condominium (TH/C) buyers had the greatest desire to own rather than rent and they were more interested in the financing plan. New TH/C purchasers were also concerned about the possibility of future price increases, but less so about the distance to work. Table 1 shows the significance of the home purchase factors, by housing type, in order of importance to respondents to the study.

IMPORTANT PHYSICAL CHARACTERISTICS

The most desired physical feature in all housing categories was high quality construction (98 percent), followed by a convenient floorplan and design (97 percent) and ample storage space (97 percent). Other important features included a light, open, spacious feeling (94 percent), a large master bedroom (92 percent), a large, modern kitchen (90 percent) and an enclosed garage (86 percent).

The desirability of many features varied by housing type. Single-family buyers had the greatest desire for a home with a light, open, spacious feeling, a fence and a large lot size. Buyers of townhomes had greater interest in purchasing a home equipped with a refrigerator.

New home buyers placed greater importance on a modern kitchen, a large master bedroom, an enclosed garage and a large bathroom. New SF buyers had the greatest desire for an enclosed garage, a formal dining room and a fireplace. New TH/C purchasers had the greatest desire for a guest bedroom or den, and were most likely to purchase a home with that feature.

Resale homebuyers placed the highest value on a solar hot water system. Purchasers of resale SF homes had the greatest desire for one bedroom per household member, while those buying a resale TH/C most often wanted common recreational facilities.

Homeowners received most features they believed important, and buyers of new homes obtained their desired features most often. However, significant gaps occurred for some features between the number of buyers who desired the item and the proportion who received it. Ninety-seven percent of all buyers felt ample storage space was important, though only 79 percent said they obtained ample space; the largest gap occurred among new SF purchasers. Differences of at least 15 percent occurred for two other features: a large, modern kitchen and a solar hot water system. More buyers received one bedroom per household member than those who said it was important.

ITEMS PURCHASED FOR THE HOME

Whether the home was new or previously owned, many new owners purchase additional items to express their personal lifestyle. New SF buyers purchased drapes most often (80 percent), followed by landscaping (65 percent). An additional 15 percent plan to purchase landscaping within the next six months, while 12 percent expect to buy a swimming pool. Table 2 lists many items purchased for the home, including the median price of the purchases.

A smaller proportion of resale SF buyers purchased all items except interior paint, renovations, carpet and a used car. The most common purchases were interior paint (43 percent), refrigerators (39 percent) and drapes (37 percent). Many of these buyers plan to purchase items for their home within the next six months. Nineteen percent expect to buy landscaping; other popular expected purchases include paint (both interior and exterior), drapes, carpet, living room furniture and appliances. Resale TH/C buyers were most apt to purchase interior paint, drapes, refrigerators and renovations. New TH/C buyers most often purchased drapes and living room furniture.

More buyers in all categories bought a new car (15 percent) than a used one (9 percent). However, the median price of new cars purchased by new SF buyers ($13,500) was lower than that of cars purchased by resale SF buyers ($16,745). The median price of resale cars bought by new SF buyers was $7,500, while resale SF buyers spent $6,450.

THE SEARCH PROCESS

Buyers actively looked for the homes they purchased for relatively short periods of time; 65 percent of all buyers searched for their homes for three months or less. Resale TH/C buyers spent the shortest amount of time searching for their homes; 77 percent spent three months or less. Purchasers of single-family homes looked longest; only 58 percent searched three months or less, while 16 percent looked for more than one year.

Buyers of new homes purchased them farther away from their previous residence than resale homebuy-

TABLE 1
IMPORTANT PHYSICAL HOME PURCHASE FACTORS

	New Single-family	*Resale Single-family*	*New TH/ Condo*	*Resale TH/ Condo*
High Quality Construction	99%	99%	100%	96%
Convenient Floorplan/Design	99	96	100	100
Ample Storage Space	94	98	100	98
Light, Open, Spacious Feeling	97	94	90	90
Large Master Bedroom	96	90	100	92
Large Modern Kitchen	96	89	95	79
Enclosed Garage	97	94	88	75
Fence	83	90	55	75
Guest Bedroom/Den	77	82	90	73
One Bedroom Per Household Member	73	82	74	62
Large Lot Size	67	80	21	32
Large Bathroom with Double Vanity	81	61	74	45
Formal Dining Room	58	47	48	33
Fireplace	63	53	50	44
Swimming Pool	40	54	58	48
Refrigerator	34	49	58	64
Common Recreational Facilities	43	38	56	73
Solar Hot Water System	19	39	16	25

Source: Survey conducted by the Arizona Real Estate Center, College of Business, Arizona State University.

ers. Almost one-third of the new SF homebuyers moved more than 10 miles when they purchased their home; 56 percent moved six miles or more. Only 16 percent of the resale SF owners moved more than 10 miles, and 41 percent moved six miles or more. Fifty percent of the new TH/C buyers moved 6 or more miles, while only 30 percent of the resale TH/C purchasers moved the same distance.

Almost all buyers became aware of their home through a real estate agent (40 percent), by driving by the home (29 percent), or through friends or relatives (13 percent). Ten percent credited a newspaper ad, while only 2 percent or fewer credited billboards or magazine ads.

Even though 83 percent of the resale SF and 79 percent of the resale TH/C buyers purchased their homes with the assistance of a real estate agent, only 56 percent and 46 percent, respectively, originally became aware of the home through the agent.

BUYER PROFILE

The typical respondent was married (73 percent) and had some college education; 60 percent had no children. The median age was 35-39 years, though TH/C buyers were older. The median income was $40,000-$49,000—only the lower income of the resale townhome buyers differed. Table 4 shows buyer characteristics for all housing types.

The typical homebuyer purchased a three-bedroom, two-bath, previously owned single-family home. The median price of all homes purchased was $87,500, and the median size was 1,700 square feet.

The typical respondent financed his/her home through a mortgage company, and obtained a 30-year, fixed-rate mortgage of 9.5 percent, with 10 percent down. New SF buyers were most likely to obtain an adjustable-rate mortgage (42 percent), while resale TH/C purchasers were least likely (16 percent). The median interest rate for resale homebuyers of both types was 10 percent, while new buyers enjoyed lower rates of 9.3 percent for SF purchasers and 9.5 percent for TH/C buyers.

The majority of the married households reported dual incomes (56 percent), and the proportion of families with dual incomes was larger among younger respondents. They were most common in new single-family homes (65 percent) and least common in new townhouses/condominiums (33 percent). Half of all townhome buyers were retired. Dual incomes are still quite important since almost half of the respondents believed they purchased the most expensive home they could afford, with a payment equaling 25 percent of their household income.

LENGTH OF RESIDENCE

Almost half of the survey's respondents have lived in the Phoenix area for more than five years (32 percent for more than 10 years). Resale TH/C buyers have lived in the Valley longer than the other groups while new TH/C purchasers have been here the shortest period of time.

Fifty-eight percent of all respondents plan to live in the Valley for more than 10 years (37 percent for the rest of their lives). TH/C owners plan to remain in the area for the longest time. Sixty-nine percent of the new TH/C buyers plan to spend the rest of their lives here and 79 percent of the resale purchasers plan to stay in the Phoenix area for more than 10 years (see Table 5).

Almost half of all respondents plan to live in their recently purchased home for five years or less, and 72 percent expect to move to another residence within 10 years. Approximately three-fourths of all SF buyers plan to live in their home for less than 10 years, while 40 percent of new TH/C and 28 percent of resale TH/C owners plan to spend the rest of their lives in their homes (see Table 6).

TABLE 2
ITEMS PURCHASED FOR HOME
AND MEDIAN AMOUNT SPENT

	All Respondents		New Single-family		Resale Single-family	
	Percent	*Amount*	*Percent*	*Amount*	*Percent*	*Amount*
Drapes	51*	$700	80	$1,200	37*	$300
Refrigerator	42	800	52	800	39	700
Washer	36	400	44	400	32	400
Landscaping	34*	1,300	65*	2,000	20*	500
Dryer	34	329	43	350	30	300
Interior Paint	29	200	9	200	43	200
Living Room Furniture	27*	1,500	29*	2,000	27*	1,000
Renovations	27	1,000	22	1,007	32*	975
Bedroom Furniture	26	1,000	26	1,500	28	600
Sprinkler System	22*	600	50*	500	8*	200
Family Room Furniture	21	1,200	27	1,400	16	1,000
Television	18	500	22	600	18	475
Microwave	18	277	22	260	16	290
Carpet	17	2,000	14	2,500	20*	1,500
New Car	15	15,000	18	13,500	13	16,745
Pool	10	12,000	24*	12,400	4	10,000
Used Car	8	6,750	8	7,500	12	6,450
Exterior Paint	7	200	—	—	13*	200

*Ten percent or more of respondents plan to purchase this item within six months.

Source: Survey conducted by the Arizona Real Estate Center, College of Business, Arizona State University.

Even though most of the respondents have lived in the Phoenix area for at least five years, almost 90 percent moved from another state. The most common states of previous residence were California, Illinois, Ohio, Colorado and Michigan. A larger proportion of single-family purchasers moved from California, while more TH/C buyers migrated from Eastern states.

The most common reasons for moving to Arizona included climate (52 percent), employment (40 percent), and quality of life (35 percent). When asked to choose the single most important reason, employment, job transfers, and climate were listed most often.

PREVIOUS RESIDENCES

The typical previous residence for all housing types was a previously owned single-family home. The median price of the previous residence was typically higher than that of the recently purchased home. Resale townhouse buyers most often had previously rented (49 percent), while 65 percent of new SF and TH/C buyers had owned their previous residence.

Homebuyers who had owned their previous homes sold them for a median price of $93,000 and had lived in them approximately five years. They then purchased the surveyed home for a median price of $87,500. The price drop shows the impact of retirees purchasing lower-priced homes as well as the higher affordability of Phoenix area homes when compared to many other states.

Even though the desires and purchases of the respondents varied by housing type, they were typically satisfied with their new homes.

– **Sharla Klvett,** *Research Analyst*
Arizona Real Estate Center

Complete Report Available

This article summarizes a more detailed report on the survey of recent homebuyers in the Phoenix area. Copies of the complete report, which includes additional tables of responses by housing type as well as comparisons to similar surveys conducted in the past, may be obtained by calling or writing the Arizona Real Estate Center, College of Business, Arizona State University, Tempe, AZ 85287; (602) 965-5440.

TABLE 3
IMPORTANCE OF FACTORS TO HOME PURCHASE DECISION

	New Single-family	*Resale Single-family*	*New TH/ Condo*	*Resale TH/ Condo*
Quality of Area	89%	80%	79%	71%
Desire to Own	77	82	88	34
Price	73	82	65	61
Investment Value	81	80	71	48
Financing Plan	54	54	67	46
Monthly Payment	50	53	47	45
Number of Bedrooms	47	58	40	33
Energy-Saving Features	51	39	71	26
Amenities	45	42	25	26
Distance to Work	33	43	13	46
School District	34	39	13	12
To Avoid Higher Prices in Future	26	26	44	39
Warranties	42	25	53	17
Builder Reputation	49	19	41	8
Status	26	19	17	16
Proximity to Friends/ Relatives	16	17	21	20

TABLE 4
CHARACTERISTICS OF HOMEBUYERS AND HOMES
(Median Figures)

	Age of Buyer	*Household Income*	*Sales Price*	*Square Footage*	*Year Built*
All Respondents	35-39	$40,000-49,000	$87,500	1,650	1982
Single-family - New	35-39	40,000-49,000	104,075	1,800	1987
Single-family - Resale	35-39	40,000-49,000	85,500	1,720	1975
TH/Condo - New	50-54	40,000-49,000	70,000	1,250	1987
TH/Condo - Resale	50-54	30,000-39,000	57,000	1,200	1979

TABLE 5
EXPECTED LENGTH OF RESIDENCE IN METROPOLITAN PHOENIX

Number of years	*New Single-family*	*Resale Single-family*	*New TH/Condo*	*Resale TH/Condo*
1-5	17%	29%	—	10%
6-10	23	20	15%	13
11-15	4	4	—	10
16-20	9	8	8	13
More than 20	9	8	8	3
Lifetime	38	31	69	53

TABLE 6
EXPECTED LENGTH OF RESIDENCE IN NEWLY PURCHASED HOME

Number of years	*New Single-family*	*Resale Single-family*	*New TH/Condo*	*Resale TH/Condo*
1-5	41%	46%	33%	49%
6-10	32	31	20	12
11-15	4	4	—	2
16-20	4	7	—	7
More than 20	3	4	7	2
Lifetime	16	9	40	28

Source (Tables 3, 4, 5 and 6): Survey conducted by the Arizona Real Estate Center, College of Business, Arizona State University.

Net In-Migration Rebounds, But Still Sluggish in Third Quarter

Net in-migration to the Phoenix area was a weak 5,000 persons during third quarter 1988, less than one-half the quarterly average between 1970 and 1987. The third quarter figure returned to the 5,000 to 8,000 range experienced between second quarter 1987 and first quarter 1988, up from a very low 1,000 persons during second quarter 1988.

The second quarter's figure was an aberration, resulting from an unusual but temporary increase in out-migration. During the third quarter, laid-off workers stayed in the state rather than leaving as they did during the second quarter, pushing the unemployment rate higher.

The Phoenix area population was approximately 2,024,000 at the end of third quarter 1988, up 11,000 from the second quarter and 40,000 from third quarter 1987. Net natural increase provided more than one-half of the gain; net in-migration totaled only 18,000 persons during the year ending third quarter 1988. Since the late 1960s smaller annual migration figures were recorded only during the depths of the 1975 and 1982 recessions.

Statewide, the population was approximately 3,492,000 at the end of the third quarter, up 16,000 during the quarter and 65,000 in the year ending September 30, 1988.

Some believe that the population gains estimated by the Center for Business Research during the last couple of years are too low. If this were true, the economic statistics would look even weaker. For example, real per capita retail sales in Maricopa County declined during the last two fiscal years, by rates approaching the decrease experienced during the 1981-82 recession, a phenomenon that has mystified many analysts. If greater population growth is assumed, the episode becomes even more difficult to explain.

The outlook for net in-migration in the next few quarters is not promising. Research currently under way clearly shows that net in-migration lags employment growth by approximately two quarters. The relationship is strongest with construction employment, which has a three to four quarter lead. Construction employment continued to decline during third quarter 1988; overall employment growth was very weak. Thus, substantial improvement in net in-migration is highly unlikely before second half 1989, though the quarterly figure may drift higher within the 5,000 to 8,000 range.

Even after mid-1989, the chance for noticeable gains in net in-migration is slim. A recovery in the construction industry must first occur. But such a recovery is unlikely as long as vacancy rates, which have not yet begun to decline, remain high. The threats of higher interest rates and a possible national recession represent additional risks to the outlook.

– **Tom R. Rex**
Research Manager

GSP Growth Revised Down

The Arizona Gross State Product (GSP) expanded less rapidly during 1986 and 1987 than previously reported. The real increase in adjusted GSP (which excludes the volatile mining and agriculture industries) was 6.8 percent in 1986, down from the earlier estimate of 7.3 percent; but still above the long-term average of 5.7 percent. However, the downward revision for 1987 was from 3.9 to 2.3 percent, far below the national growth rate.

The revision resulted first from new personal income figures for 1985-88, which had the effect of slightly raising current dollar GSP growth in 1985 and 1986, but lowering it for 1987. In addition, the deflators were revised back to 1983, lifting real growth rates slightly during the 1983-85 boom, but reducing growth rates in 1986 and 1987.

Weak growth continued through the first half of 1988, with the annual increase through second quarter 1988 totaling only 1.7 percent. As seen in Table 1, seasonal problems remain in data used to compute GSP. After three consecutive years in which growth during the first quarter was estimated to be much higher than in any other quarter, declines were measured in the first quarters of 1987 and 1988.

Economic growth — measured by gross product — has been slower in Arizona than in the nation as a whole since early 1987, a relationship usually reserved only for the depths of a recession. During 1988, employment gains in Arizona also have been well below the national average; during 1987, output per Arizona employee declined.

The gross products of three Arizona industries — construction, FIRE (finance, insurance and real estate) and government — declined in the year ending second quarter 1988. Growth was rapid in the manufacturing industry, though it was accomplished mostly by productivity rather than employment gains.

– **Tom R. Rex**
Research Manager

TABLE 1
REAL ECONOMIC GROWTH

	Quarterly Percent Change			Annual Percent Change		
	GSP	*Adjusted GSP*	*GNP*	*GSP*	*Adjusted GSP*	*GNP*
1st Quarter 1987	–0.6	–1.6	1.1	1.1	1.3	1.5
2nd Quarter 1987	1.4	1.8	1.2	2.6	2.1	3.0
3rd Quarter 1987	0.9	1.1	1.1	2.5	2.8	3.9
4th Quarter 1987	1.0	2.0	1.5	2.7	3.1	5.0
1st Quarter 1988	–1.7	–2.4	0.8	1.6	2.3	4.8
2nd Quarter 1988	1.9	1.0	0.7	2.1	1.7	4.2

Notes: Annual percent change compares gross product in a given quarter to that of the same quarter of the prior year. All GSP data were revised.

Source: Gross State Product (GSP) and adjusted GSP (minus the contributions of the agriculture and mining industries) from Center for Business Research, College of Business, Arizona State University. Gross National Product (GNP) from U.S. Department of Commerce, Bureau of Economic Analysis.

Recovery Foreseen For Weak Phoenix Housing Market

Maricopa County's real estate market remains weak, with continuing concern about how long it will take to recover. However, the market is not dead, and there is no question that it will recover.

ECONOMIC CONDITIONS

The current economy is plagued by low net migration, declining job growth and high vacancy rates, at least partially the result of overbuilding by the construction industry. These three factors interact to compound the problem, as well as to increase bankruptcies and foreclosures, which are both at record levels.

Net migration during the past year has been lower than in any nonrecessionary year since the late 1960's, and significant improvement is not forecast for two or more years. In-migration is declining and out-migration is increasing slightly, due at least partially to better economic conditions in competing states. For the first time since the late 1960s, Arizona's economy is performing below the levels of surrounding states, as well as below the national average, leading to reduced net migration.

Net in-migration was estimated at only 5,000 during the third quarter. The past four quarters combine to form the lowest year since the late 1960s, excluding the troughs of the 1975 and 1982 recessions.

Seasonally adjusted job growth hit its lowest level since1982 during second quarter 1988. New job creation in Arizona during the year ending in August was only 1.4 percent versus 3.4 percent the prior year, dropping Arizona to 37th place among all states. September was even weaker, which will further lower the state's ranking.

Vacancy rates have also been at their highest levels ever. Vacancy rates for single-family homes hit an all-time high of 4 percent during the third quarter, when over 19,000 single-family homes were vacant, according to the recently released Phoenix Metropolitan Housing Study. The number of vacant homes during all three quarters of 1988 was nearly twice as high as the next-highest 8,500 in fourth quarter 1986.

The 15 percent apartment vacancy rate was less than its all-time high of 17 percent during the prior quarter, due to typical seasonal patterns, but higher than in any other third quarter. Rates in the urbanized areas ranged from 11 percent to 22 percent. Vacancy rates will probably remain high as construction is finished on the 4,700 units which have been permitted but are not completed.

Low migration and job growth join with the high vacancy rates to create a dilemma for the construction industry. Should firms continue building, attempting to make constructive use of their land and lead the competition, but contribute to continued high vacancy rates? Or should they cut back further on construction, allowing vacancy rates to fall, but laying off additional personnel in the short run?

HOME SALES AND PRICES

Third quarter home sales totaled 13,350 units, a decrease of 3 percent from second quarter 1988 and 13 percent from third quarter 1987. The median sales price of all homes sold increased only 1 percent from the prior quarter.

New home sales, especially townhouses and condominiums, have been declining for the past year. Only 100 new townhouses/condos were sold during the third quarter, continuing the significant decline of the past two years. The median price of new townhouses/condos purchased fell 12 percent, implying that mostly low-priced units were purchased. Resale townhouse/condo sales and prices remained relatively stable compared to the prior quarter.

New single-family homes have generally been following a trend of higher prices and lower sales volumes since second quarter 1987. This movement is slowing, however; new single-family sales fell only 5 percent during the third quarter and

TABLE 1
METROPOLITAN PHOENIX HOME SALES

	Single-Family			Townhouse/Condominium			
Median Sales Price	*Resale*	*New*	*Total*	*Resale*	*New*	*Total*	*Grand Total*
First Quarter 1987	$75,000	$92,050	$81,400	$63,000	$70,950	$66,000	$78,500
Second Quarter 1987	77,500	94,650	84,000	64,000	74,650	67,000	80,725
Third Quarter 1987	79,700	100,200	86,000	62,000	75,550	64,900	82,000
Fourth Quarter 1987	77,500	102,400	85,700	63,350	80,625	66,500	82,500
First Quarter 1988	76,500	103,450	84,000	63,000	71,900	64,825	79,900
Second Quarter 1988	77,000	98,900	83,825	61,500	78,950	64,000	80,000
Third Quarter 1988	78,900	102,500	85,000	62,000	69,450	62,500	80,900
Number of Sales							
First Quarter 1987	6,525	3,975	10,500	1,550	1,050	2,600	13,100
Second Quarter 1987	9,725	4,350	14,075	2,225	1,025	3,250	17,325
Third Quarter 1987	8,925	3,550	12,475	2,225	650	2,875	15,325
Fourth Quarter 1987	6,825	3,575	10,400	1,750	650	2,400	12,800
First Quarter 1988	6,075	2,150	8,225	1,600	275	1,875	10,125
Second Quarter 1988	8,200	3,200	12,000	1,950	325	2,300	13,700
Third Quarter 1988	8,225	3,025	11,250	2,025	100	2,125	13,375

Note: All numbers rounded to nearest 25; subcategories may not add to total due to rounding.

Source: Arizona Real Estate Center, College of Business, Arizona State University; from data supplied by Real Estate Evaluation Group, Chandler, Az.

prices have returned to the level of fourth quarter 1987.

FORECAST

Net migration and vacancy rates will play key roles in the recovery of the construction industry. However, construction activity typically leads in-migration by three to four quarters, and construction cannot increase significantly until either migration increases or vacancy rates decline. Migration, job growth, vacancy rates and construction all interact to boost each other when the economy is booming, but the current conditions are such that each holds the other back and makes recovery more difficult.

Continued slow migration combined with the high vacancy rates and subpar growth forecasts make it difficult to create a scenario in which the local economy, particularly the construction sector, will regain its prior strength during the next eighteen months. More likely scenarios project weak conditions in the construction sector for another two to three years.

The Arizona Real Estate Center expects approximately 14,000 single-family and 6,000 multifamily permits to be issued in 1989, resulting in a multifamily vacancy rate of approximately 12-13 percent by the end of the year.

– **Sharla Klvett,** *Research Analyst*
Arizona Real Estate Center

Housing Affordability Levels Off in Third Quarter

Affordability of Phoenix area single-family homes remained relatively high during third quarter 1988. Increases in mortgage interest rates and sales prices were almost offset by increases in household incomes, reducing affordability only slightly.

New home affordability fell two points from the prior quarter, performing considerably below the resale index level. At 92, the index for new homes was considerably above the long-term average of 79 from 1981-1988, and equal to the average of the prior 10 quarters.

At 119, the index for resale homes fell slightly from the level it held the prior two levels, but remained far above the level of 100 required for the median-income household to qualify for the median-priced home.

COMPONENT CHANGES

Home prices have been trending upward since 1981. Prices of new homes have increased 41 percent since first quarter 1981; resale home prices have increased 26 percent. The faster rise in new home prices has led to a larger spread between affordability levels of new and resale homes since 1981. The resale home index has increased from 68 during first quarter 1981 to the current level of 119, an increase of 75 percent. The index for new homes has increased from 59 to 92, an improvement of only 56 percent.

Interest rates have been considerably lower since 1986 than they had been during the first five years of the decade. Third quarter 1988's rate of 10.9 percent was only slightly higher than the average of 10.6 percent for the prior 10 quarters, but considerably below the 14.9 percent average from 1981-1985.

During second quarter 1988, a median-income household could afford a $94,025 home - considerably more than the $78,900 median-priced resale home, but less than the $102,500 median- priced new home.

The Phoenix affordability indexes continued to outperform the national indexes. The national new home index fell from 84 to 79 while the resale index fell from 104 to 102.

OUTLOOK

No dramatic changes in housing affordability are expected until at least the first part of 1989, when interest rates may once again reduce affordability levels. If predictions of interest rate increases after the presidential election are realized, affordability will suffer.

The national economy may have a larger impact in the future. If the national economy should enter a recession, which is uncertain at this point, the local economy would also be affected, impacting median incomes as well as interest rates and possibly home prices.

– **Sharla Klvett,** *Research Analyst*
Arizona Real Estate Center

TABLE 1
HOUSING AFFORDABILITY INDEXES
Metropolitan Phoenix; Single-family Only

			Resale Homes			New Homes		
	Median Gross Monthly Income	*Effective Interest Rate*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*
1st Qtr. 1987	$2,920	9.4%	$75,000	$630	131	$92,050	$770	106
2nd Qtr. 1987	2,970	10.6	77,500	710	116	94,650	870	96
3rd Qtr. 1987	3,010	10.8	79,700	750	113	100,200	940	90
4th Qtr. 1987	3,060	11.3	77,500	760	113	102,400	1,000	86
1st Qtr. 1988	$3,100	10.7%	$76,500	$710	122	$103,450	$960	90
2nd Qtr. 1988	3,140	10.8	77,000	720	121	98,900	930	94
3rd Qtr. 1988	3,170	10.9	78,900	740	119	102,500	970	92

Source: Arizona Real Estate Center, College of Business, Arizona State University. Interest rates are from the Federal Home Loan Bank Board *News*.

Government and Food Stores Most Common Basic Industries

The differing economic natures of Arizona's counties are evident in the lists of their industries which have a "basic" component. Basic industries bring in money from outside a geographic area by producing goods and services for export to tourists, seasonal residents and new residents as well as to markets outside the area. An industry is considered to have a basic component if its location quotient — the ratio of an industry's share of the local economy to that industry's national share — exceeds one. Growth of basic industries leads and determines an area's overall development, but basic industries are not necessarily the largest in an area.

Food store retailing and government are the most common industries with a basic component in Arizona's counties (see Table 1). Agriculture, mining, public utilities and government are basic activities primarily in the rural counties. Construction, real estate and manufacturing are more commonly basic in the state's metropolitan areas.

Apache County

Many of Apache County's basic industries are tied to natural resources: farming and ranching, mining of non-metallic minerals, manufacturing of lumber and wood products, and power generation. Heavy construction—largely of power plants—has a very high location quotient. As in most rural counties, government—particularly federal—is a basic activity, in part because of federal administration of Indian reservations.

Cochise County

Government—federal and military—is the county's most basic industry. Others are related to natural resources: farming and ranching, agricultural services, metal mining, power generation, and manufacturing of stone, clay and glass products. The only other industries with a location quotient greater than 1.0 are food store retail and communications.

Coconino County

Tourism is the foundation for many of this county's basic industries. Hotels and other lodging places has a very high location quotient. Most components of retail trade as well as auto repair, services and garages are basic. In addition, all subsectors of the construction industry are basic, as are public utilities and manufacturing of lumber and wood products. Both federal and state and local government are strongly basic.

Gila County

Mining and the related primary metals manufacturing are the main basic activities in Gila County. Government has only a small basic component while certain retail trade categories reflect a degree of tourism and second home development.

Graham County

This is a retail trade/services center for much of eastern Arizona and western New Mexico, with numerous subsectors in each major industry having a location quotient greater than 1.0. Agriculture is important to the county, reflected in the ratios for farming and ranching, agricultural services, and building materials/agricultural equipment retailing.

Greenlee County

Most industries in Greenlee County have very small location quotients. Other than mining, only public utilities and construction had ratios barely exceeding 1.0 in 1986.

La Paz County

Primary basic industries in La Paz County are farming and ranching and agricultural services, though the county serves as a retail trade center as well. Government and hotels and other lodging places also have location quotients exceeding 1.0.

Maricopa County

The Phoenix metropolitan area has a long list of basic industries, though none have particularly high location quotients. The list includes each of the construction subsectors; most of the retail trade categories; a number of the services subsectors, including legal services and business services (the only county to export these services); each of the finance, insurance and real estate components; and durables manufacturing of electric and electronic equipment, transportation equipment other than motor vehicles, and instruments. However, government, mining, public utilities and farming are *not* basic industries.

Mohave County

Mohave has more industries with a basic component than any of the other rural counties. The highest location quotients are in metal mining and tourism-related retail trade and services subsectors. Laughlin, Nevada, with gambling casinos but little else, contributes to the tourism-related activities. Other basic industries include construction, three manufacturing subsectors, railroad transportation, public utilities, insurance agents, real estate, and state and local government.

TABLE 1
COMMON BASIC INDUSTRIES IN ARIZONA'S COUNTIES

Industry	Number[1]
Food store retailing	13*
Total government	13*
State and local government	12*
Federal civilian government	11
Automotive dealers and service stations	10*
Hotels and other lodging places	10*
Farming	9
Total retail trade	9*
Construction	8*
Public utilities	8*
Building materials/agricultural equipment retailing	8*
Agricultural services	7*
Mining	7*
Eating and drinking places	7*
Auto repair, services and garages	7*
Miscellaneous repair services	7*

[1] Number of counties in which location quotient exceeds 1.0

* Indicates the industry has a basic component at the state level.

Source: Center for Business Research, College of Business, Arizona State University from earnings by place of work data produced by the U.S. Department of Commerce.

Navajo County

Mining, farming and ranching, forestry, manufacturing of lumber and wood products and public utilities all have basic components. Navajo County receives enough tourism to put some retail trade sectors and hotels and other lodging places into the basic category. Transportation, communication, and federal and state and local government also are basic.

Pima County

The Tucson area's basic industries generally resemble those of the Phoenix area. However, the FIRE industries are not basic, but government and metal mining are basic. Manufacturing of non-electric machinery replaces electric and electronic equipment on the list. In addition, a greater number of services subsectors are basic, making it the only county where the entire services industry is basic.

Pinal County

The old mainstays of the Arizona economy, mining and agriculture, are basic to Pinal's economy. The only other industries with location quotients exceeding one are food store retailing, state and local government, and manufacturing of food products—the only county in which this is a basic industry.

Santa Cruz County

Santa Cruz's economy revolves around trade with Mexico, both on the wholesale and retail level. Catering to non-residents, some of its retail trade subsector location quotients are very high. Transportation (related to trade), government, and hotels and other lodging places also have ratios exceeding one.

Yavapai County

Several subsectors of services and nearly all those of trade are among this county's basic industries. Government, agriculture, mining and construction also have location quotients exceeding one.

Yuma County

Farming, agricultural services, military, and railroad transportation have high location quotients. The other government subsectors are basic as well. Due in part to seasonal residents, a few retail trade and services subsectors are also basic.

– Tom R. Rex
Research Manager

Per Capita Gross Products Vary By County

Per capita Gross County Product (GCP) in 1986 ranged by a factor of more than three between Greenlee County's figure of $20,341 and Graham County's $6,296. The only other county to surpass the state average of $15,880 was Maricopa at $18,884 (see Figure I). A large gap separated the urban counties of Maricopa and Pima.

One source of this variation is the labor force participation rate, or more generally, the number of dependents per working person. A high proportion of retirees accounts in part for low per capita GCPs in Yavapai and Mohave counties. Apache County's figure is lowered by a large number of youths and high unemployment.

The industrial mix plays a role as well. Counties with a large proportion of jobs in a high-paying industry —e.g., mining in Greenlee County — have higher per capita GCPs. Geographic differences in wage levels also contribute to deviations in per capita GCP.

Growth rates of GCP per person also vary widely. Between 1970 and 1986, statewide inflation-adjusted growth was 31 percent. Navajo County's 77 percent and Greenlee County's 56 percent surpassed considerably the growth rates of Yuma/La Paz and Maricopa counties (see Figure II) and a big gap occurred between Maricopa and Pima counties.

– Tom R. Rex
Research Manager

FIGURE I
GROSS COUNTY PRODUCT PER CAPITA
Current Dollars, 1986

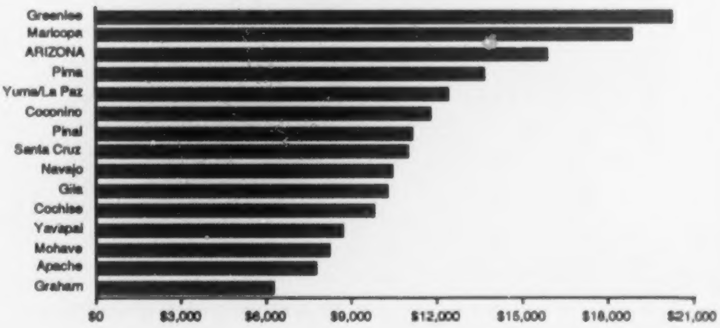
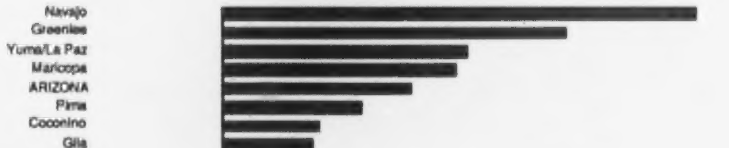


FIGURE II
PERCENT CHANGE IN GROSS COUNTY PRODUCT PER CAPITA
Real Dollars, 1970-1986



Source (Figures I and II): Center for Business Research, College of Business, Arizona State University.

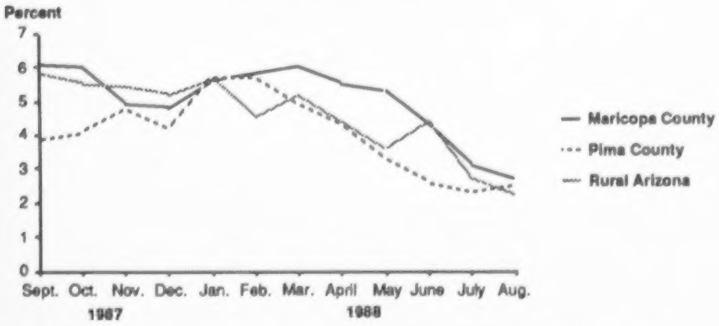
Coincident Indexes Flat in August

Arizona's economy stabilized in August after four successive months in which the state's coincident economic indexes generally declined. Preliminary data for September suggest that the state's economy expanded, though at a much below average rate.

The coincident economic index for the Phoenix area was unchanged in August at 147.8 (1982=100). In rural Arizona, the index rose less than 0.1 percent to 128.0. The Tucson area economy registered slight growth, its index rising 0.2 percent to 137.1, but the composite statewide measure was flat at 142.5.

A sharp rise in the unemployment rate had the largest negative impact on each area's coincident index in August. Offsetting this were gains in the value of commercial building permits — which recovered most of July's big loss — and in employment. Though the Tucson area's retail sales fell considerably — the fourth decline in five months — its employment-unemployment situation was the best of the three areas, resulting in its strongest overall gain. Retail sales were flat in the Phoenix area, but rose in rural Arizona to the second-highest monthly value on record.

FIGURE I
COINCIDENT ECONOMIC INDEXES
Year-to-Year Percent Changes



Source: Center for Business Research, College of Business, Arizona State University.

Between March, when the coincident indexes peaked, and August, the cumulative decline was 2.6 percent in non-urban Arizona, 1.3 percent in Pima County and 0.1 percent in Maricopa County. The annual growth rate in August was down to approximately 2.5 percent in each area (see Figure I).

While Maricopa County suffered the least during this economic slowdown, its economy appears to have declined slightly in September. In contrast, Pima County's economy probably expanded at a rate similar to that in August while rural Arizona may have experienced a slightly larger gain.

The coincident indexes continue, with a few months lag, to follow changes in the Arizona leading index. A continuance of this pattern would mean some additional improvement in the economy's growth rate during the fall, but no evidence suggests that the growth rate will return to near-average levels.

– Tom R. Rex
Research Manager

Purchasing Indicators Growth is Modest in October

The Arizona economy showed signs of further softening in October. Employment saw no growth for the first time in the past eighteen months. While all indicators except employment were positive, new orders received and production experienced only moderate growth. However, Arizona firms did add to inventory, following September's reduction, and the rate of inflation has not intensified.

Prices paid for purchased items continued to tilt upward in October, but at a slightly lower rate than in September and the lowest since last March. Lower energy prices continue to moderate the inflation pressures. However, further interest rate increases may be necessary before the end of the year to hold inflation in check.

TABLE 1
OCTOBER PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (October compared to September)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	47	51	2
Delivery time from vendors	34	55	11
Purchased materials inventory level	28	51	21
New orders received	36	40	24
Production	36	48	16
Employment	22	56	22
Purchases	42	36	22

Source: Purchasing Management Association of Arizona, Purchasing Management Association of Southern Arizona, and the Northern Arizona Group.

While the caution light is on, the Arizona economy can be expected to finish out the year with a record of consistent, albeit moderate, growth.

– Harold Fearon
Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Leading Index Slides in September

The Arizona Index of Leading Economic Indicators slipped to 110.6 in September, a decline of 0.7 percent from the August level of 111.4 (1977=100). The decline came after six consecutive months of small but positive advances (Figure 1).

Only one of the 10 components of the index registered a positive change in September. That component was Arizona production as reported in a survey of purchasing managers.

The greatest negative influence came from a drop in seasonally adjusted residential building permits for September. Changes in the national money supply, sensitive prices, and new orders also exerted strong downward pulls on the index.

ANALYSIS

The national Composite Index of Leading Indicators maintained by the U.S. Commerce Department's Bureau of Economic Analysis also declined in September, by 0.5 percent. Components contributing to the decline in the national index were similar to those influencing the Arizona index, including orders for plant and equipment, building permits, sensitive materials prices, and the money supply.

However, on the national level, several key index components moved in a positive direction, including the manufacturing workweek and vendor performance reports of slower delivery times. Both of these components dipped in the Arizona index.

As did the Arizona index, the national index dropped after the stock market turbulence of the fall of 1987, then resumed growth beginning in the first part of 1988. But while the national index gained about 1.8 percentage points since its post-crash low, the Arizona index is now only 0.5 percentage points higher than its December 1987 low.

OUTLOOK

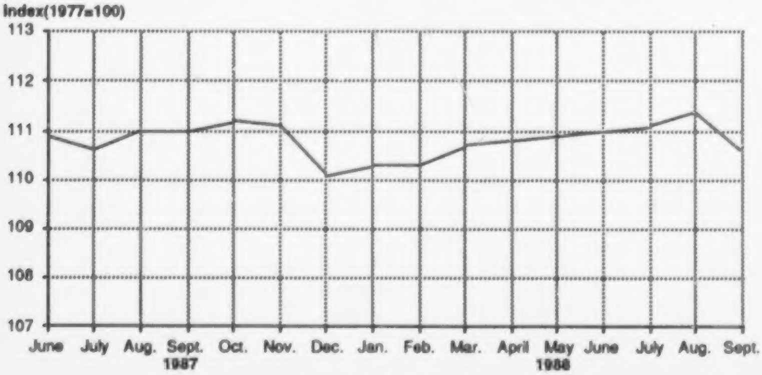
The national economy continues to record solid growth in output and employment. Unemployment rates are low and consumer expectations are at a high level.

The Arizona economy, in contrast, seems destined to end the year on a note of sluggish growth. The boom in export products and capital equipment spending that has fueled the national expansion for the past few quarters has not brought significant benefits to the local economy.

The September decline in the leading index reinforces the likelihood that 1989 will be a year of substandard economic performance for Arizona.

– **Lee R. McPheters,** *Director*
Economic Outlook Center

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution*			
	June	*July*	*Aug.*	*Sept.*
Delivery Time°	−.13	.13	.02	−.08
Inventory Levels°	−.08	.17	−.06	−.06
New Orders°	.01	.08	−.02	−.08
Production°	.03	.01	−.08	.01
Employment°	−.05	.05	.05	−.03
Residential Building Permits	.03	−.23	.39	−.29
Unemployment Insurance Claims	.19	.00	.00	.00
Average Workweek, Manufacturing	−.09	−.05	.06	−.02
Money Supply	.06	−.06	−.10	−.10
Change in Sensitive Materials Prices	.03	.02	.01	−.07
OVERALL INDEX CHANGE (%)	.01	.13	.27	−.73

*The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

°Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

The Arizona leading index is based on 10 economic indicators, combined and weighted to project the pace of economic activity several months ahead. Five of the components come from a monthly survey of Arizona purchasing managers conducted by Dr. Harold Fearon. The Arizona Index of Leading Economic Indicators is sponsored by Citibank (Arizona).

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	*Value*	*Percent Change from Previous Period*	*Percent Change from Year Ago*	*Year-to-Date*	
					Value	*Percent Change from Year Ago*
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	2nd Qtr.	59.221	2.4	6.0	NA	NA
Arizona - 1982 Dollars	2nd Qtr.	47.827	1.9	2.1	NA	NA
COINCIDENT ECONOMIC INDEXES (1982 = 100)						
Arizona	August	142.8	0.0	2.5	NA	NA
Metropolitan Phoenix	August	147.8	0.0	2.7	NA	NA
Metropolitan Tucson	August	137.1	0.1	2.5	NA	NA
Non-urban Arizona	August	128.0	0.1	2.2	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	3rd Qtr.	120.8	0.8	4.1	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Sept.	110.6	−0.7	−0.4	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	August	457,691	[illegible]	36	2,457,690	−8
Pima County	August	30,742	−6	−24	336,841	−17
Balance of State	August	50,624	−3	11	458,566	8
Arizona	August	539,057	[illegible]	29	3,253,107	−7
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	August	2,284	47	8	16,147	−16
Pima County	August	341	43	−16	3,885	−14
Balance of State	August	641	2	−17	6,322	−12
Arizona	August	3,266	35	−3	26,354	−15
HOME SALES						
Maricopa County - Number	Sept.	4,400	−15	1	36,875	−16
Maricopa County - Median Price	Sept.	82,400	2	−1	80,300	0
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	3rd Qtr.	92	−2.1	2.2	NA	NA
Metropolitan Phoenix - Resale Homes	3rd Qtr.	119	−1.7	5.3	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	October	10.8	−1.0	−6.0	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	3rd Qtr.	2,024	0.5	2.0	NA	NA
Arizona	3rd Qtr.	3,492	0.5	1.9	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Sept.	3,910	−10.1	16.4	33,894	12.6

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University.

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Quarterly Economic Forecast Update

Arizona Economy To Remain Sluggish, Improve in 1990

Although the longest peacetime expansion of the U.S. economy should continue through 1989, the Economic Outlook Center (EOC) expects the Arizona economy to struggle in the months ahead. By 1990, if the nation can avoid sliding into a recession, Arizona should be well-positioned to enjoy stronger growth. However, if the nation's economy were to weaken perceptibly in 1989 and 1990, it is unlikely Arizona would rebound before 1991 or 1992.

The last fifteen months have been characterized by unprecedented levels of uncertainty. The October 1987 stock market crash threatened the stability of global financial markets in a manner not seen since the Great Depression and World War II. The economy bounced back from the crash remarkably well, but doubts persisted about the viability of the current expansion well into 1989.

The prospect of the Presidential election exacerbated the uncertainties until the outcome was no longer in doubt. By then, however, the growing plight of the ailing savings and loan industry, combined with a new surge of leveraged buy-outs and merger mania, only served to keep the financial markets skittish.

Through it all, the U.S. economy has performed admirably. Those who wondered if the recovery would stall last summer may have been surprised when the Bureau of Economic Analysis, U.S. Department of Commerce, reported the economy grew at an annual rate of 2.6 percent during third quarter 1988 and showed no signs of recession.

While much of the nation prospered in 1988, the Arizona economy struggled. Many real estate markets suffered from overbuilding, but Phoenix and Tucson have suffered more than most. Combined with a relatively stagnant manufacturing sector, the state's real estate slump has caused its economy to perform below the levels observed a few years ago. These factors also will limit Arizona's 1989 growth potential.

THE NATIONAL ECONOMY

In a November speech in Flagstaff, Lester C. Thurow, professor of economics and dean of MIT's Sloan School of Management, described the nation's growth path as a tunnel. The U.S. economy, he argued, must continue to grow as it has in recent years: in a range defined by real GNP growth of 2.5 to 3.5 percent per year.

If the economy expands too rapidly, inflation and a falling dollar

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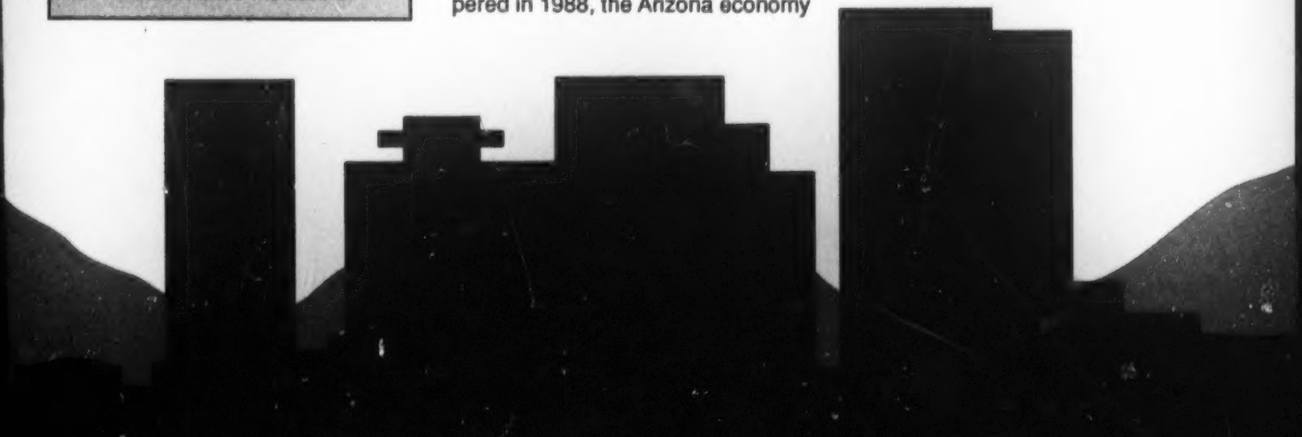

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could cause the foreign capital that has financed the budget and trade deficits to flee, resulting in soaring interest rates and recession. If growth is too slow, then U.S. imports from Latin America would decrease, many nations would be unable to make their interest payments to American banks, and a financial crisis could result.

Since 1985, U.S. policy makers have been successful in steering this narrow course. Although the dollar has lost about half its value versus the yen and the deutchmark, its decline has been gradual. And, while real economic growth has surged at times, spurring fears of inflation, either policy or serendipity has kept the nation's growth within sustainable limits.

A fortuitous combination of events has given the economic recovery unprecedented longevity. The severity of the 1981-1982 recession created a backlog of consumer demand which allowed the economy to roar ahead at better than 6 percent per year in 1984. By spring 1985, the dollar began its long decline and set the stage for the export-driven expansion of American manufacturing that followed. By late 1985, fears of rising inflation caused interest rates to climb, fueling doubts about the recovery's duration.

World oil markets collapsed in early 1986, which slew the inflation monster, at least for the time being. Long-term interest rates dropped to levels not seen since the 1970s, creating a new wave of demand for housing and consumer durables. Strong stock and bond prices gave U.S. corporations access to swelling streams of capital to finance business expansion or—in many cases—mergers and leveraged buyouts. Single-digit interest rates also allowed the tax-related boom in office, commercial and multifamily construction to continue unabated across much of the United States.

Meanwhile, depressed prices for oil and other commodities took their toll on personal income and business confidence in the resource-based economies of the oil, gas, mining and farming states. This resulted in what Jerry Jordan, chief economist at First Interstate Bancorp, called the "souffle economy" (firm on the edges, soft in the middle). The slump in the central states may have shaved enough of the peak off of the nation's aggregate demand to allow the economy to remain within Lester Thurow's growth tunnel.

By 1987, the national economy (with the notable exception of the aforementioned oil and farm states) was almost too good to be true. In a sense, it was. However complex or elusive the causes of the October 1987 crash may have been, one result was clear. It scared the financial markets back to reality and cooled the American consumer's ardor for unfettered spending.

As luck would have it, though, renewed strength in corporate profits and business investment spending came to the rescue. While consumer demand for imports climbed at a slower rate, manufacturers began to benefit from the weaker dollar in the form of rising exports and profits. By 1988, American firms were well-positioned to take advantage of enhanced competitiveness which resulted from the declining dollar and the cost reductions brought about by the mid-1980s wave of corporate restructuring. Renewed confidence and rising sales abroad led to additional investment in plant and equipment and allowed the economic expansion to continue.

How long can the nation's economy continue to walk along the knife-edge between a recession or an unsustainable boom? Nobody knows. However, barring unforeseen shocks, calamities or grave policy errors, there is no reason to believe that the expansion cannot continue for another year or two, if not longer. Of course, a major shock to the global economy—inherently unpredictable—could develop into a recession very quickly.

THE U.S. OUTLOOK

The EOC's forecast for the U.S. economy is summarized in Table 1. The forecast embraces a somewhat more optimistic view of the outlook than it did three months ago (*Arizona Business*, October 1988). Overall, real economic growth in the United States is expected to average 2.5 percent in 1989 and 2.4 percent in 1990, somewhat less than the estimated growth rates of 3.4 and 3.8 percent, respectively, in 1987 and 1988. Consumer purchases of durable goods, which were growing at an annual rate exceeding 10 percent during the first half of 1988, slowed substantially during the third quarter; the subsequent reduction in aggregate demand is partially responsible for the moderation in economic growth anticipated next year and in 1990.

TABLE 1
1988 AND 1989 ECONOMIC FORECASTS: UNITED STATES

	Actual *1987*	Estimated *1988*	Forecast *1989*	Forecast *1990*
Gross National Product				
Billions of 1982 Dollars	3,847.0	3,994.0	4,093.7	4,192.0
Percent Change	3.4	3.8	2.5	2.4
Industrial Production				
Percent Change	3.8	5.4	3.1	2.8
Net Exports				
Billions of 1982 Dollars	–134.3	–94.9	–76.4	–69.9
Housing Starts				
Number in Millions	1.62	1.47	1.44	1.52
Percent Change	–10.5	–9.3	–2.0	5.6
Unemployment Rate				
Percent	6.2	5.5	5.5	5.8
Consumer Price Index				
Percent Change	3.7	4.1	4.7	4.7
Three-Month Treasury Bill Rate				
Percent	5.8	6.6	7.4	6.8
Aaa Corporate Bond Rate				
Percent	9.4	9.8	10.1	9.6

Source: Economic Outlook Center, College of Business, Arizona State University.

Reduced demand for durable goods, in turn, is primarily responsible for the slower growth of industrial production expected in 1989 and 1990, when output is projected to increase respectively by 3.1 and 2.8 percent. While these increases would be well below the estimated 5.4 percent increase observed in 1988, it should be noted that at least some of the output gains in 1988 were attributable to the record-breaking heat wave last summer that caused the production of electricity to surge throughout much of the United States. In any event, softening demand, if not cooler weather, should yield smaller gains in industrial production during the next two years.

Interest rates are projected to continue a gradual climb in 1989 before falling back a little in 1990. The expected results include lower levels of business investment spending and fewer housing starts, which are expected to total 1.44 million units in 1989; in 1990, if long-term interest rates decline as projected, more than 1.5 million housing starts are forecast.

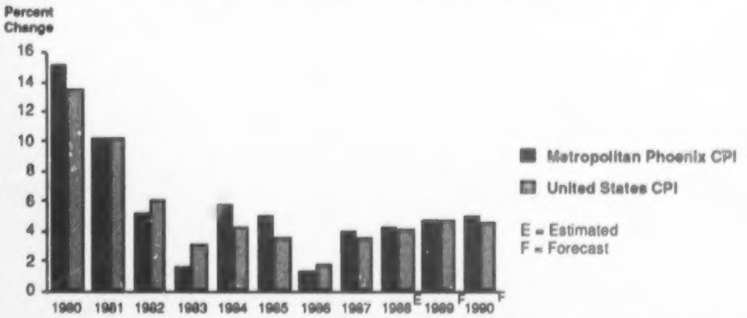
The rate of inflation is expected to increase but to remain below 5 percent per year for the duration of the forecast period (see Figure I). A key contingency is the price of crude oil, which firmed in the wake of the most recent round of OPEC meetings. If the OPEC nations are serious about enforcing their production quotas, higher crude oil prices could cause higher inflation (and interest rates) than these forecasts would suggest. The bet here, however, is that the cartel will produce enough oil to prevent fuel prices from rising very rapidly during 1989 and 1990. Otherwise, higher prices for gasoline, heating oil, chemicals and fibers could combine with rising labor costs and food prices to fuel a surge in the inflation rate, possibly to 6 percent per year or more.

World currency markets also present a major risk to the forecast. With a meager private savings rate, a huge federal budget deficit and an insatiable demand for imported goods, the United States is extraordinarily dependent on foreign capital flows to finance current consumption and government spending. If the exchange value of the dollar were to sink sufficiently to dissuade foreign investors from holding U.S. bonds and Treasury notes, a severe and sudden capital shortage could develop, with soaring interest rates (and recession) the probable result.

THE ARIZONA FORECAST

The EOC's forecasts for Arizona and the Phoenix metropolitan area are summarized in Tables 2 and 3 (page 4). Economic growth in the state is expected to be unusually weak in 1989 for two reasons. First, the widely-reported construction slump that has dogged Arizona's developers, construction firms and financial institutions since 1986 will continue at least through 1990. If the national economy proves to be less robust than the forecasts in Table 1 would indicate, the real estate recovery will be delayed even longer. Until millions of square feet of office, retail and multifamily residential space are absorbed, there will be no reason to expect a significant rebound in construction activity.

FIGURE I
CONSUMER PRICES
METROPOLITAN PHOENIX AND THE UNITED STATES



Source: Center for Business Research and Economic Outlook Center, College of Business, Arizona State University; and Bureau of Labor Statistics, U.S. Department of Labor.

The second limiting factor is the disappointing performance of Arizona's manufacturing sector. Many analysts have grown old waiting for the high-technology export boom that never arrived in Arizona. Regardless of the source of the failed expectations—cuts in defense spending, corporate mergers, or redeployment of company assets outside of Arizona—it is unlikely that a belated surge of hiring activity will develop. The EOC continues to believe manufacturing activity in Arizona will be relatively weak until 1990, and improvement then will occur only if the national economy keeps growing at a respectable pace.

Employment

The EOC's Arizona employment forecasts are detailed in Table 4 (page 5). Falling employment in two major sectors—construction and manufacturing—will suppress employment growth to a rate of just 2.5 percent in 1989, the weakest labor market conditions observed in the state since 1982. By 1990, modest improvements by these industries, combined with expanded hiring in the service-providing industries, should yield a relatively healthy employment rate of 4.2 percent in 1990. The finance, insurance and real estate (FIRE) sector is expected to stabilize, but it will grow at less than half the rate observed as recently as 1986 and 1987.

Personal Income

Weak job formation in construction, FIRE and manufacturing—relatively well-paying industries—is expected to yield smaller gains in Arizona personal income in 1989, when a gain of 6.6 percent is forecast. By 1990, however, improved hiring and rising wages should push the rate of income growth to 7.8 percent, comparable to the 8 percent gain recorded in 1987.

Lackluster labor markets have not only inhibited income growth, but consumer spending as well. Figure II (page 5) illustrates the relationship between personal income and retail sales growth since the recession year 1982. Pent-up demand for consumer durables fueled double-digit increases in retail sales during the early stages of the expansion. Rapid

TABLE 2
1988 AND 1989 ECONOMIC FORECASTS: ARIZONA

	Actual *1987*	Estimated *1988*	Forecast *1989*	Forecast *1990*
Gross State Product				
Millions of 1982 Dollars	47,020	47,975	49,128	50,991
Percent Change	2.2	2.0	2.4	3.8
Personal Income				
Millions of Current Dollars	48,466	51,876	55,308	59,632
Percent Change	6.0	7.0	6.6	7.8
Retail Sales				
Millions of Current Dollars	18,001	18,868	19,714	20,785
Percent Change	4.7	4.8	4.5	5.4
Unemployment Rate				
Percent	6.3	6.3	6.8	6.5
Wage and Salary Employment				
Number in Thousands	1,383.7	1,425.9	1,462.0	1,524.0
Percent Change	3.4	3.0	2.5	4.2
Population				
Number in Thousands	3,405	3,476	3,552	3,638
Percent Change	3.1	2.1	2.2	2.4
Single-Family Units Permitted				
Number	27,360	22,220	19,330	22,410
Percent Change	–19.7	–18.8	–13.0	15.9
Multifamily Units Permitted[1]				
Number	12,038	7,850	6,410	6,950
Percent Change	–55.4	–34.8	–18.3	8.4

[1] Apartment complexes of three or more units

TABLE 3
1988 AND 1989 ECONOMIC FORECASTS: MARICOPA COUNTY

	Actual *1987*	Estimated *1988*	Forecast *1989*	Forecast *1990*
Consumer Price Index				
Percent Change	4.1	4.3	4.8	5.1
Retail Sales				
Millions of Current Dollars	11,743	12,264	12,819	13,527
Percent Change	3.5	4.4	4.5	5.5
Unemployment Rate				
Percent	5.2	5.1	5.7	5.3
Wage and Salary Employment				
Number in Thousands	912.7	938.1	962.6	1,005.7
Percent Change	3.4	2.8	2.6	4.5
Population				
Number in Thousands	1,970	2,013	2,061	2,116
Percent Change	3.6	2.1	2.4	2.7
Single-Family Units Permitted				
Number	18,012	14,740	12,560	14,570
Percent Change	–24.5	–18.2	–14.8	16.0
Multifamily Units Permitted[1]				
Number	9,106	5,960	4,720	5,220
Percent Change	–50.3	–34.5	–20.8	10.6

[1] Apartment complexes of three or more units

Source (Tables 2 and 3): Economic Outlook Center, College of Business, Arizona State University.

job creation through the mid-1980s helped keep sales strong, but consumer spending waned as employment diminished and jobs were lost in construction, finance and manufacturing. A sharp reduction in population growth (from more than 4 percent per year to barely more than 2 percent) also has contributed to the sluggish income and sales growth observed in 1988 and predicted for 1989.

Construction

Of course, slower population growth also is a major reason why housing construction has fallen off in Arizona, especially in the Phoenix and Tucson metropolitan areas. Migration flows to Arizona diminished in response to the reduced rate of job growth that developed when the construction and manufacturing industries faltered in 1986.

Tax legislation passed during the early years of the Reagan administration made income-producing real estate an unusually attractive tax shelter for investors and developers throughout the country. At the same time, Arizona's explosive growth between 1983 and 1985 attracted more than its share of speculative dollars to the state's real estate market. So, while overbuilding certainly is not unique to Arizona, the state came to have more new construction than even the most effervescent regional economy could possibly absorb.

Figure III provides an interesting contrast between Arizona's last two major home building booms. In 1978, more than 50,000 single-family homes were permitted, a level that was not reached at the height of the mid-1980s boom, when the state was much bigger. However, changing consumer tastes alone did not raise the mid-1980s level of multifamily construction to more than double the 1978 level. The tax laws were responsible.

It is no surprise, then, that the tax reforms enacted in 1986, combined with reduced migration to Arizona, snuffed out speculative multifamily construction in a hurry. With apartment vacancy rates in metropolitan Phoenix well into the mid-teens, it seems reasonable to assume that, barring a huge influx of migrants to Arizona, multifamily home building will remain below 10,000 units per year for at least several more years.

SUMMARY

Given the impressive record compiled by the Arizona economy in recent years, it is difficult not to focus on the demonstrably weaker signals transmitted by the state's economic data in 1988. As recently as 1985 and 1986, Arizona still led the 50 states in such measures as job creation, population growth and personal income growth. By summer 1988, the state's ranking in employment growth had slipped into the mid-30s. It is only natural to ask what went wrong.

Growth of the magnitude observed in Arizona during the late 1970s and the mid-1980s, still fresh in our minds, was not normal, typical or sustainable. A wave of growth in high-technology manufacturing, including some major corporate relocations and expansions, was largely responsible for the boom in the late 1970s. The energy crisis, which favored the Sun Belt in general, and demographics that featured a mobile, footloose generation of baby boomers, also played a role.

During the 1980s, the impetus for extraordinary growth in Arizona was provided by the rapid growth of defense contracting and by the aforementioned explosion of speculative real estate development. Again, demographic trends and the economic problems of the Great Lakes region and the oil-producing states were very important factors.

Most analysts agree that Arizona's economy, despite problems that have persisted for the last two years, is fundamentally sound. Even if population growth has been cut in half, to 2 percent per year, it is still more than twice the national average.

However, those who may wish for a quick fix for the Arizona economy (such as the superconducting supercollider) will have to keep hoping. This forecast, which is relatively optimistic about the outlook for the state, depends on a smooth ride for the national economy during the next two years. A good performance by the U.S. economy will produce strong, but not exceptional, growth in Arizona. However, if a national recession is on the horizon, Arizona will not be insulated from its effects.

– **Brian Cary,** *Economist*
Economic Outlook Center

TABLE 4
ARIZONA EMPLOYMENT FORECASTS FOR 1989-1990 (thousands)

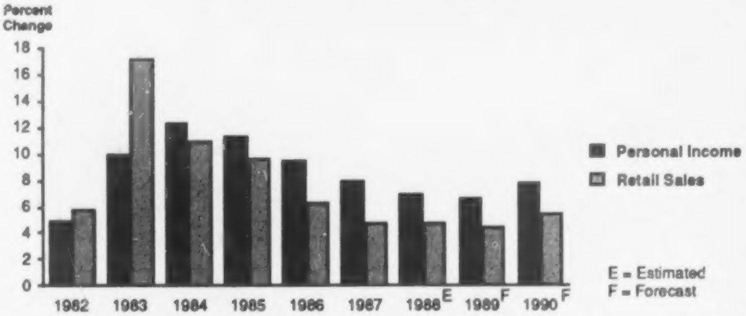
	1988	Percent Change	1989	Percent Change	1990	Percent Change
Manufacturing	189.0	1.0	188.3	(0.4)	192.5	2.2
Mining	12.1	6.1	12.4	2.5	12.6	1.6
Construction	94.3	(7.9)	89.1	(5.5)	89.5	0.4
TCPU*	73.6	2.2	75.2	2.2	78.0	3.7
Trade	353.1	4.0	367.3	4.0	386.1	5.1
FIRE**	93.2	(1.3)	95.4	2.4	99.4	4.2
Services	367.7	6.9	382.8	4.1	407.1	6.3
Government	242.9	4.3	251.5	3.5	258.8	2.9
Total Wage and Salary Employment	1,425.9	3.0	1,462.0	2.5	1,524.0	4.2
Total Employment	1,546.0	2.2	1,582.0	2.3	1,650.0	4.3
Total Unemployment	104.0	3.0	116.0	11.5	114.0	(1.7)
Labor Force	1,650.0	2.2	1,698.0	2.9	1,764.0	3.9
Unemployment Rate	6.3		6.8		6.5	

*Transportation, Communications and Public Utilities

**Finance, Insurance and Real Estate

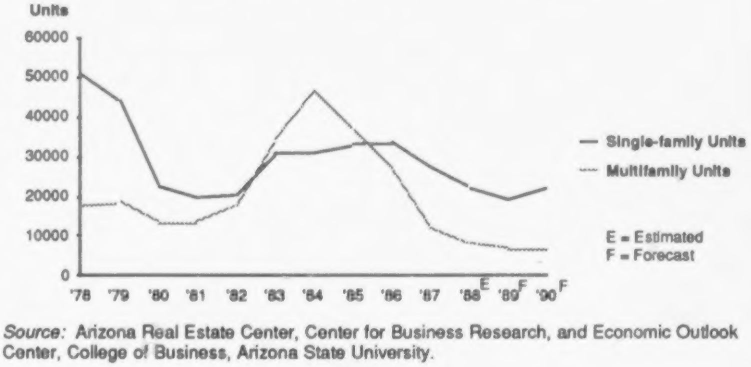
Source: Economic Outlook Center, College of Business, Arizona State University.

FIGURE II
ARIZONA PERSONAL INCOME AND RETAIL SALES GROWTH, 1982-1990



Source: Arizona Department of Revenue and Economic Outlook Center, College of Business, Arizona State University.

FIGURE III
ARIZONA RESIDENTIAL CONSTRUCTION
New Housing Units Authorized



Source: Arizona Real Estate Center, Center for Business Research, and Economic Outlook Center, College of Business, Arizona State University.

Arizona Leading Index Slips Again in October

The Arizona Index of Leading Economic Indicators declined to 110.1 in October, a decrease of 0.5 percent from September's 110.6 (1977 = 100). The October dip was the second in the past two months (Figure I).

The greatest negative influence on the index again this month was a decrease in the value of seasonally adjusted residential building permits. An additional strong negative force was a reduction in the money supply, the fourth consecutive decline for this component.

Three components made positive contributions to the index in October. Ordered from largest to smallest effect, they included inventory levels, new orders, and production by Arizona firms.

ANALYSIS

The Arizona Index of Leading Economic Indicators rose steadily from the end of 1982 until October of 1987, when it peaked at 111.2. During this period, Arizona enjoyed exceptional economic growth, adding some 200,000 jobs.

The index showed particular strength during 1985 and 1986, when it increased by six points. These were years of vigorous performance by the general indicators of the Arizona economy.

The growth of the index slowed significantly beginning in the early part of 1987 and the index finished that year below its January starting point. During 1988, the index recovered slowly to a new peak in August and then slipped back to the current 110.1 reading. This index value is identical to that recorded two years ago, in October of 1986.

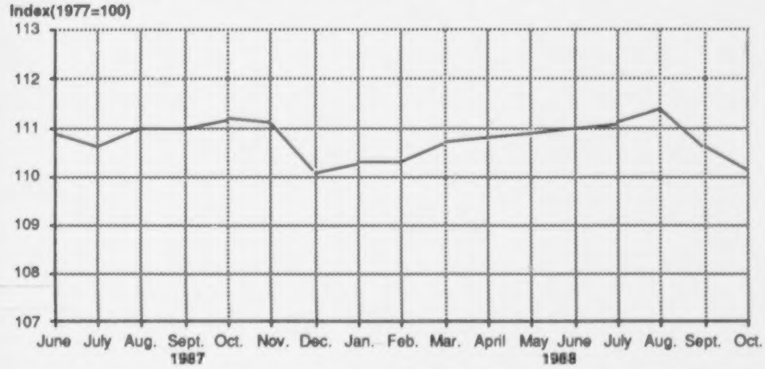
OUTLOOK

The path of the index during the past two years is consistent with the performance of the Arizona economy during the period. While growth has been present, it has been weaker than recorded during 1985 and 1986. The recent drop in the index confirms the outlook most analysts hold for 1989: an unspectacular year for Arizona.

The behavior of the index during the next two to three months bears watching. Further declines would signal the possibility of a swing from the slow positive growth experienced during the past quarters to no growth or even contraction of the economy in the year ahead.

– **Lee R. McPheters,** *Director*
Economic Outlook Center

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution*			
	July	*Aug.*	*Sept.*	*Oct.*
Delivery Time*	.13	.02	–.08	–.03
Inventory Levels*	.17	–.06	–.06	.14
New Orders*	.08	–.02	–.08	.06
Production*	.01	–.06	.01	.02
Employment*	.05	.05	–.03	–.10
Residential Building Permits	–.23	.39	–.24	–.20
Unemployment Insurance Claims	.00	.00	.00	.00
Average Workweek, Manufacturing	–.05	.05	–.02	–.07
Money Supply	–.05	–.10	–.12	–.14
Change in Sensitive Materials Prices	.02	.01	–.06	–.08
OVERALL INDEX CHANGE (%)	.13	.27	–.69	–.40

*The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

The Arizona leading index is based on 10 economic indicators, combined and weighted to project the pace of economic activity several months ahead. Five of the components come from a monthly survey of Arizona purchasing managers conducted by Dr. Harold Fearon. The Arizona Index of Leading Economic Indicators is sponsored by Citibank (Arizona).

Arizona Construction Slumps in Third Quarter

After showing some improvement during the second quarter 1988, construction activity in Arizona declined during the third quarter. Total new construction was valued at nearly $1.2 billion (18,683 permits), a 14 percent decrease from the $1.4 billion (22,926 permits) recorded for the second quarter. In the first three quarters of 1988, new construction activity totalled $3.6 billion (62,107 permits) in contrast to the permitted value of $4 billion (72,224 permits) in the same period in 1987. Table 1 shows that construction in all of the key sectors is below the level reported both during the prior quarter and a year ago.

While Maricopa County had less construction during the third quarter (down from $1 billion to $923 million), its share of the state's activity increased from 75 to 78 percent. Pima County had a 34 percent decline from the second quarter (from $137 to $90 million) and just 8 percent of the total activity for the state. Fourteen percent of the total recorded activity occurred in the rest of the state, but the value decreased from $202 million to $163 million. The primary areas of non-metropolitan development were the counties of Mohave ($36 million), Yavapai ($33 million), and Pinal ($22 million).

The twelve areas shown in Table 2 again accounted for 85 percent of the total permitted activity in Arizona. Phoenix reported an improvement over the second quarter (from $396 to $416 million) due only to a $100 million permit for the fourth terminal at Sky Harbor. Tucson declined 46 percent from the second quarter (from $57 to $31 million). The only non-metropolitan area on the list, unincorporated Yavapai County, had $16 million in permitted activity, down from $29 million in the second quarter.

SECTORAL ACTIVITY

Residential

Although housing affordability remained good during the second quarter (see *Arizona Business*, December 1988), single-family activity in Maricopa County declined to 3,859 permits in the third quarter from the 4,347 permits of the previous quarter. At the same time, the average permit value has increased from $95,195 to $100,600. In contrast to a year ago, only the cities of Avondale (up from 60 to 90 permits) and Phoenix (from 1,088 to 1,170 permits) reported improved levels of activity.

In response to increasing economic concerns, the single-family sector in Pima County plunged 31 percent from the second quarter (from 991 to 682 permits). Much of the decreased activity was in the unincorporated areas (down from 707 to 483 permits), but Tucson also dropped from 185 to 109 permits and Oro Valley remained fairly consistent (98 to 89 permits). Average single-family permit value in Pima County declined from $69,250 in the second quarter to $67,350.

In the non-metropolitan areas of the state, single-family activity fol-

TABLE 1
KEY SECTOR CONSTRUCTION ACTIVITY
(Third Quarter 1988, Second Quarter 1988, and Third Quarter 1987)

	SINGLE FAMILY		COMMERCIAL						INDUSTRIAL	
			APARTMENTS[a]		OFFICE BUILDINGS[b]		RETAIL STORES[c]			
	Number of Permits	*Dollar Value (000)*	*Number of Units*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*
Maricopa County										
Third Quarter 1988	3,865	388,794	1,321	48,881	51	58,386	200	60,189	44	15,363
Second Quarter 1988	4,347	413,813	2,888	138,715	61	70,289	231	134,766	32	14,573
Third Quarter 1987	4,472	426,644	3,224	156,413	108	115,488	191	78,091	59	41,281
Pima County										
Third Quarter 1988	682	45,933	260	6,625	18	4,185	29	6,734	4	225
Second Quarter 1988	991	68,616	397	15,094	20	5,570	14	1,331	10	5,738
Third Quarter 1987	1,093	74,082	490	10,107	11	9,308	28	11,090	6	726
Rest of Arizona										
Third Quarter 1988	1,266	85,118	138	3,483	19	4,752	59	8,237	13	4,533
Second Quarter 1988	1,428	98,200	190	5,513	36	3,434	81	27,865	22	2,442
Third Quarter 1987	1,386	88,035	187	4,726	23	3,328	55	9,998	16	3,479
Arizona Total										
Third Quarter 1988	5,813	519,845	1,719	58,989	88	67,323	288	75,160	61	20,121
Second Quarter 1988	6,766	580,629	3,475	159,322	117	79,293	326	163,962	64	22,753
Third Quarter 1987	6,951	588,761	4,001	171,246	142	128,124	274	99,179	81	45,486

[a] Five or more housing units
[b] Office, bank, medical and professional buildings
[c] Shopping centers and other mercantile buildings

Source: Arizona Real Estate Center and Center for Business Research, College of Business, Arizona State University.

TABLE 2
REPORTING UNITS WITH GREATEST TOTAL VALUE OF BUILDING PERMITS
Third Quarter 1988

Reporting Unit	Value (in millions)
Phoenix	$416
Scottsdale	145
Mesa	75
Chandler	56
Unincorporated Pima County	53
Unincorporated Maricopa County	49
Tempe	47
Peoria	46
Gilbert	43
Tucson	31
Glendale	22
Unincorporated Yavapai County	16

Source: Arizona Real Estate Center and Center for Business Research, College of Business, Arizona State University.

lowed the same pattern, moving from 1,428 permits (average value of $68,768) in the second quarter to 1,266 permits (average value of $67,235) in the third. Leading areas of activity were Lake Havasu City (205 permits), unincorporated Navajo County (78 permits), and Flagstaff (63 permits).

Commercial

After a strong second quarter (2,888 units), the apartment sector in Maricopa County declined to 1,321 permits, for a year-to-date total of 4,838 authorized units, down from 6,366 units for the same time period in 1987. The primary areas of apartment development were Phoenix (720 units), Gilbert (296 units), and Scottsdale (165 units).

TABLE 3
ARIZONA HOUSING UNITS AUTHORIZED
Third Quarter 1988

	One Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total*
APACHE COUNTY	41	13	0	0	0	54
Percent Change, Previous Year	128	–48	—	—	—	4
Percent Change, Previous Qtr.	103	–32	—	—	—	36
COCHISE COUNTY	48	20	0	0	0	68
Percent Change, Previous Year	–66	43	—	—	—	–57
Percent Change, Previous Qtr.	–55	67	—	—	—	–48
COCONINO COUNTY	172	102	2	0	0	276
Percent Change, Previous Year	7	3	0	—	—	6
Percent Change, Previous Qtr.	–1	–8	–86	—	—	–29
GILA COUNTY	58	46	0	0	0	104
Percent Change, Previous Year	–60	–21	—	—	—	–41
Percent Change, Previous Qtr.	–6	–31	—	—	—	–19
GRAHAM COUNTY	14	43	0	0	0	57
Percent Change, Previous Year	88	–20	—	—	—	–10
Percent Change, Previous Qtr.	–26	–37	—	—	—	–34
GREENLEE COUNTY	0	0	0	0	0	0
Percent Change, Previous Year	—	—	—	—	—	—
Percent Change, Previous Qtr.	—	—	—	—	—	—
LA PAZ COUNTY	2	60	0	4	0	66
Percent Change, Previous Year	–33	178	—	—	—	167
Percent Change, Previous Qtr.	–60	9	—	—	—	10
MARICOPA COUNTY	3,859	39	4	11	1,321	5,234
Percent Change, Previous Year	–14	–68	–85	–78	–60	–36
Percent Change, Previous Qtr.	–11	–69	–91	–88	–54	–30
MOHAVE COUNTY	362	203	0	0	12	577
Percent Change, Previous Year	19	–9	—	—	–60	–4
Percent Change, Previous Qtr.	0	–18	—	—	–82	–15
NAVAJO COUNTY	90	26	0	0	0	116
Percent Change, Previous Year	6	–7	—	—	—	3
Percent Change, Previous Qtr.	0	–32	—	—	—	–6
PIMA COUNTY	682	17	12	6	260	977
Percent Change, Previous Year	–36	–60	50	–14	–47	–42
Percent Change, Previous Qtr.	–31	–18	0	0	–35	–32
PINAL COUNTY	141	86	0	8	113	348
Percent Change, Previous Year	96	–19	—	–25	822	64
Percent Change, Previous Qtr.	68	50	—	—	—	144
SANTA CRUZ COUNTY	60	0	2	4	6	76
Percent Change, Previous Year	55	—	0	0	0	60
Percent Change, Previous Qtr.	50	—	—	–33	—	55
YAVAPAI COUNTY	239	150	10	14	8	421
Percent Change, Previous Year	–41	9	25	40	–58	–36
Percent Change, Previous Qtr.	–45	–1	25	–53	–60	–50
YUMA COUNTY	80	94	0	0	0	174
Percent Change, Previous Year	11	0	—	—	—	1
Percent Change, Previous Qtr.	–10	–13	—	—	—	–17
TOTAL, ARIZONA	5,855	892	30	46	1,718	8,541
Percent Change, Previous Year	–16	–28	–46	–40	–57	–31
Percent Change, Previous Qtr.	–13	–16	–65	–71	–61	–26

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University

Pima County reported only 260 authorized units, down from 397 units in the second quarter, with 247 of them authorized for the unincorporated area. In the rest of Arizona, 138 units were authorized,112 of them in Apache Junction.

After a record-setting second quarter ($135 million), the retail sector in Maricopa County decreased to $60 million. Phoenix led with $27 million (down from $78 million), followed by Tempe with $14 million ($8 million). However, this sector improved in Pima County, from $1 million in the second quarter to $7 million in the third, with $5.5 million in retail activity recorded in Tucson. In the rest of Arizona, retail development fell from $28 million to $8 million; Cottonwood recorded $2.6 million and Casa Grande, $1.2 million.

While well below the $115 million level reported a year ago, the office building sector in Maricopa County remained strong in the third quarter at $58 million. With 18 permits, Phoenix accounted for $48 million of the county's permitted activity. In Pima County, Tucson had $1.3 million with $2.3 million being recorded in the unincorporated areas. Only unincorporated Yavapai County recorded permitted activity in excess of $1 million.

The hotel/motel sector improved slightly from $8.6 million to $11 million. All of the activity was recorded in Phoenix, where 262 rooms were added.

Industrial

Industrial development in Maricopa County improved slightly over the second quarter (from $14 to $15 million), but is still well below the $41 million recorded during the third quarter of 1987. Chandler led with 23 permits valued at $7 million, followed by Phoenix (13 permits worth $5 million).

In contrast, industrial activity in Pima County fell from $6 million to under $1 million. With 3 permits valued at $2.1 million, unincorporated Yuma County led the non-metropolitan areas, followed by Casa Grande with 3 permits worth $1.7 million.

Other

This sector was dominated by a single permit for $100 million for the fourth terminal at Sky Harbor. Permits for two public parking garages in Phoenix accounted for another $13 million.

New educational facilities in the state were valued at $28 million; the leading areas were Page with $4.4 million, and Show Low with $3.4 million. New health care facility development remained strong at $24 million. One permit was issued in Peoria for $13 million.

LOOKING AHEAD

Driven by a rapidly growing economy and population in the early 1980s, Arizona had a building boom of unprecedented proportion. However, construction activity soon exceeded the demands of an expanding, albeit slowing, market. In fact, the development activity was so heightened that even after two years of slowing activity, practically all sectors of the industry are still overbuilt.

As a result of this overbuilding, most sectors have reported high va-

TABLE 4
ARIZONA BUILDING PERMITS
Third Quarter 1988

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*
APACHE COUNTY	82	1,916	1	43	0	0	19	3,866	111	5,816
Percent Change, Previous Year	19	–4	–90	–61	—	—	200	1,283	25	137
Percent Change, Previous Qtr.	56	6	0	–48	—	—	350	8,267	79	203
COCHISE COUNTY	140	2,082	3	466	0	0	141	456	287	3,016
Percent Change, Previous Year	–59	–68	–67	–63	—	—	–27	–16	–49	–66
Percent Change, Previous Qtr.	–36	–56	–88	–67	—	—	–20	–15	–34	–66
COCONINO COUNTY	800	17,678	26	1,382	2	307	160	6,385	987	25,729
Percent Change, Previous Year	–3	18	–17	–70	0	–92	–9	21	–5	1
Percent Change, Previous Qtr.	–3	–17	–61	–80	100	1,806	–10	451	–7	–12
GILA COUNTY	246	5,716	7	125	0	0	31	2,547	284	8,387
Percent Change, Previous Year	–6	–10	–63	–78	—	—	–30	385	–12	14
Percent Change, Previous Qtr.	–1	–4	–86	–84	—	—	–61	286	–14	7
GRAHAM COUNTY	111	1,370	7	166	0	0	22	906	140	2,443
Percent Change, Previous Year	–8	20	–30	–96	—	—	25	1,130	–1	–60
Percent Change, Previous Qtr.	–67	–6	133	–6	—	—	47	56	–18	–4
GREENLEE COUNTY	0	0	0	0	0	0	0	0	0	0
Percent Change, Previous Year	—	—	—	—	—	—	—	—	—	—
Percent Change, Previous Qtr.	—	—	—	—	—	—	—	—	—	—
LA PAZ COUNTY	98	1,005	10	480	0	0	27	175	135	1,658
Percent Change, Previous Year	139	167	43	–66	—	—	42	266	88	–13
Percent Change, Previous Qtr.	10	2	67	422	—	—	13	60	13	42
MARICOPA COUNTY	5,480	407,276	630	220,888	44	16,363	4,180	278,772	10,303	923,300
Percent Change, Previous Year	–18	–9	–36	–43	–26	–63	–36	32	–23	–15
Percent Change, Previous Qtr.	–18	–7	–32	–41	38	6	–30	32	–26	–11
MOHAVE COUNTY	864	28,146	37	5,462	1	3	296	2,884	1,201	36,236
Percent Change, Previous Year	5	14	8	61	–80	—	1	–36	4	9
Percent Change, Previous Qtr.	–16	–5	–16	–23	–80	–84	–17	–9	–17	–6
NAVAJO COUNTY	338	7,732	9	388	0	0	68	3,982	480	12,076
Percent Change, Previous Year	92	22	8	–63	—	—	126	820	82	98
Percent Change, Previous Qtr.	–5	0	–83	–88	—	—	21	1,804	–4	0
PIMA COUNTY	1,487	61,034	78	18,381	4	225	1,480	18,862	3,068	98,492
Percent Change, Previous Year	–60	–36	–4	–36	–63	–88	–65	–54	–62	–42
Percent Change, Previous Qtr.	–63	–32	12	–15	–80	–88	11	–40	–6	–34
PINAL COUNTY	481	13,717	54	8,432	5	2,006	211	1,082	751	26,187
Percent Change, Previous Year	74	75	84	86	25	406	62	–21	68	88
Percent Change, Previous Qtr.	71	87	80	–4	–44	136	37	–71	83	18
SANTA CRUZ COUNTY	72	3,800	3	200	0	0	6	610	81	4,713
Percent Change, Previous Year	86	124	–40	–94	—	—	–45	666	47	97
Percent Change, Previous Qtr.	86	122	–63	–88	—	—	20	10,067	56	125
YAVAPAI COUNTY	786	20,446	34	7,882	2	181	174	1,864	996	30,443
Percent Change, Previous Year	–16	–26	10	80	0	–84	–41	–74	–23	–26
Percent Change, Previous Qtr.	–17	–31	–17	–5	–80	–71	–36	–84	–32	–36
YUMA COUNTY	244	7,795	16	3,129	3	2,066	166	3,891	432	16,881
Percent Change, Previous Year	6	7	–46	–27	0	200	7	118	2	20
Percent Change, Previous Qtr.	–13	–10	–17	–45	50	1,250	–25	24	–17	–6
TOTAL, ARIZONA	10,883	674,058	808	269,480	61	28,121	7,098	327,430	18,795	1,191,086
Percent Change, Previous Year	–12	–11	–61	–40	–48	–66	–62	16	–17	–16
Percent Change, Previous Qtr.	–16	–11	–27	–40	–6	–12	–21	28	–16	–14

*Includes mobile homes

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University cancy rates during 1988. But in spite of slow construction and real estate markets, the Arizona economy has continued to grow and people have continued to move to the state. This growth, while slower than the last few years, has supported the current levels of activity, especially within Maricopa County.

As in most of 1988, no broad-based trend is discernible that would stimulate a strong improvement in market and construction activity. Most of the current development activity is aimed at specific market niches, a condition evidenced by the fact that much of the quarter's activity was driven by a few large projects such as Camelback Esplanade ($27 million) and Sky Harbor ($100 million). The role of public projects has become increasingly important in sustaining the construction industry. For example, public projects in Phoenix, valued at $127 million, accounted for 31 percent of the $416 million total recorded for the city in the third quarter.

Nothing appears to be occurring that will soon stimulate the construction market, and there is still expectation of adverse economic conditions that would significantly lower activity for the remainder of 1988 and for 1989. Thus, the outlook for 1989 does not call for any improvement over the last two years. Before any improvement can occur, the economy and population must expand at faster rates than experienced during 1988. Such expansion is required, not only to spur construction activity, but —more important—to allow the market to absorb the current supply of space.

The key to renewed growth in construction activity lies largely in the regeneration of positive perceptions of the future among developers. Basically, a developer must feel relatively secure about the acceptance of his proposed project before he can realistically undertake actual construction. There are, of course, many measures on which such a perception of the future can be based. But, unless some combination of these measures leads developers to perceive the future market as being much improved over its present state, another strong level of construction activity will not begin.

Arizona still has the basic strength and diversity in its economy for a very positive outlook for the 1990s, but though the long-term outlook is very good, market and economic activity will not support stronger levels of activity for the next year. 1988 and 1989 should still be good years, but development will continue to be slow and uneven.

– Jay Q. Butler

Dr. Butler is Associate Professor of Real Estate and Director of the Arizona Real Estate Center in the ASU College of Business.

Arizona's Construction Industry is One of the Most Cyclical in Nation

Annual growth of Arizona's construction industry has varied more since the early 1960s than in any state except Alaska, Nevada and Wyoming. In each of these low-population states and in Arizona, the construction industry is unusually large and fast-growing on average, despite considerable ups and downs.

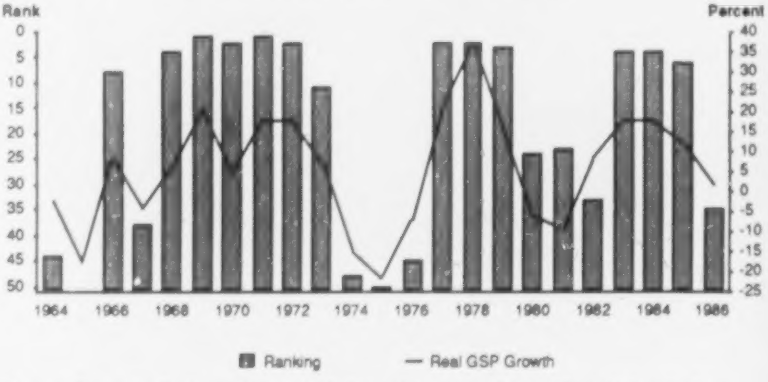
The growth of Arizona's construction gross product and its ranking among the 50 states is shown in Figure I. Arizona's construction industry was among the nation's five fastest growing in 1968-72, 1977-79 and 1983-84, but was among the five worst performing in 1965 and 1974-75. It also failed to keep pace with the national average in 1980-82 and since 1986.

The variations in Arizona usually follow the national economic cycle. However, in the early to mid-1960s and mid- to late 1980s, Arizona's construction industry experienced long down cycles when the national construction industry and the economy in general continued to expand healthily. In contrast, in 1970, Arizona construction continued to expand despite a mild national recession.

The severe cyclicality of the construction industry largely explains the greater than average cyclicality of the entire Arizona economy (see page 11 of the October 1988 issue). In contrast, the cyclicality of manufacturing, the state's other main goods-producing industry, rates about average.

– Tom R. Rex
Research Manager

ARIZONA CONSTRUCTION GROSS PRODUCT
RANKING AND ANNUAL GROWTH RATE



Source: Center for Business Research, College of Business, Arizona State University from U.S. Department of Commerce, Bureau of Economic Analysis data.

Coincident Indexes Reveal Continued Weakness in September

The Phoenix area economy plunged 0.9 percent in September, the fourth consecutive monthly decline, putting its coincident index at 146.4 (1982=100). In contrast, the indexes for the Tucson area and for non-urban Arizona each rose 0.2 percent, the second consecutive small gain in each area. Pima County's index advanced to 137.3 while that for rural Arizona edged up to 128.4. The composite statewide measure fell 0.6 percent to 141.7.

The economic slowdown affected Pima County and rural Arizona particularly during the spring and early summer, while the downturn was slower to develop in Maricopa County. However, in the six months between March and September, the cumulative declines in the Phoenix and Tucson areas were nearly equal (see Figure I).

All components of the coincident indexes dropped in all areas during the six months ending in September, but sharp rises in the unemployment rate had the greatest effect. Gains in late 1987 and early 1988 were greater than the losses of the last six months, putting the annual growth rates between 1.5 and 2 percent in each area.

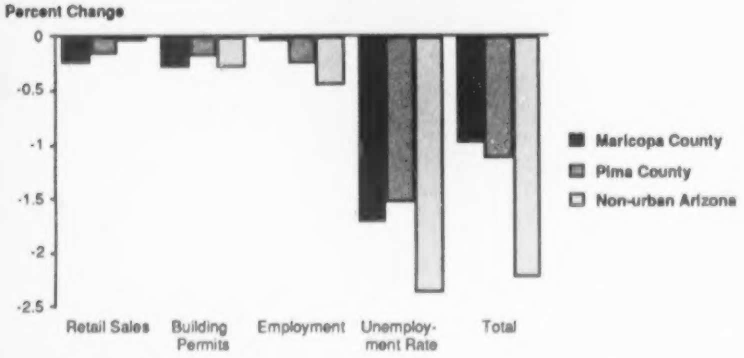
In September, the unemployment rate in each area rose substantially — for the third consecutive month — while the value of commercial building permits declined, especially in Maricopa County. Retail sales advanced in Pima County but dropped in rural Arizona and Maricopa County — to the lowest level since January 1986 in the latter. Employment fell in the Phoenix area but rose elsewhere in the state.

Preliminary employment data for October show further sharp rises in the unemployment rate in the metropolitan counties, though the rate stabilized in rural Arizona. The Phoenix area again suffered employment losses while the rest of the state posted gains.

The modest recovery outside Maricopa County is in line with the small gains measured in the Arizona leading index earlier this year; it should spread to the Phoenix area soon. However, the drop in the September leading index signals that the recovery will be modest and short-lived. Arizona is in for more hard times through at least the middle of 1989.

– **Tom R. Rex**
Research Manager

FIGURE I
CUMULATIVE CHANGE IN COINCIDENT INDEXES
April 1988–September 1988



Note: Total is trend-adjusted.
Source: Center for Business Research, College of Business, Arizona State University.

Purchasing Indicators Show Little Movement in November

The Arizona economy moved sideways in November, as signs of an economic slowing contined to mount. The indicators generally were weak in October, and they continued to soften in November. New orders received showed only a very small increase, and inventory levels fell. Employment of Arizona firms dropped, the first net decline since December 1986. Inflationary pressures continued.

Further price increases, fueled by higher energy prices and shortages of capacity, will continue in the first quarter of the new year. Higher interest rates, designed to prevent any dramatic step-up in the inflation rate, will continue to curtail economic growth. The Arizona economy will slide into 1989, and overall economic growth will be marginal at best through the first quarter.

– **Harold Fearon**

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

TABLE 1
NOVEMBER PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (November compared to October)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	47	51	2
Delivery time from vendors	30	62	8
Purchased materials inventory level	24	43	33
New orders received	37	29	34
Production	37	38	25
Employment	15	66	19
Purchases	41	25	34

Source: Purchasing Management Association of Arizona, Purchasing Management Association of Southern Arizona, and the Northern Arizona Group.

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	*Value*	*Percent Change from Previous Period*	*Percent Change from Year Ago*	*Year-to-Date Value*	*Year-to-Date Percent Change from Year Ago*
GROSS STATE PRODUCT						
(In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	2nd Qtr.	59.221	2.4	6.0	NA	NA
Arizona - 1982 Dollars	2nd Qtr.	47.827	1.9	2.1	NA	NA
COINCIDENT ECONOMIC INDEXES						
(1982 = 100)						
Arizona	Sept.	141.7	–0.6	1.6	NA	NA
Metropolitan Phoenix	Sept.	146.4	–0.9	1.8	NA	NA
Metropolitan Tucson	Sept.	137.3	0.1	2.2	NA	NA
Non-urban Arizona	Sept.	128.4	0.2	1.5	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	3rd Qtr.	120.9	0.3	4.1	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Oct.	110.1	–0.5	–1.0	NA	NA
BUILDING PERMITS						
(Total Dollar Value in Thousands)						
Maricopa County	Sept.	231,706	–48	–41	2,689,385	–12
Pima County	Sept.	27,284	–11	–55	364,125	–22
Balance of State	Sept.	54,545	–16	–19	532,896	3
Arizona	Sept.	313,534	–43	–40	3,586,406	–11
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Sept.	1,397	–38	–56	17,544	–22
Pima County	Sept.	399	17	–50	4,284	–19
Balance of State	Sept.	723	–22	–23	7,386	–9
Arizona	Sept.	2,519	–29	–49	29,214	–19
HOME SALES						
Maricopa County - Number	Oct.	4,960	13	18	43,910	–15
Maricopa County - Median Price	Oct.	81,000	–2	–1	80,500	1
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	3rd Qtr.	92	–2.1	2.2	NA	NA
Metropolitan Phoenix - Resale Homes	3rd Qtr.	119	–1.7	5.3	NA	NA
MORTGAGE INTEREST RATES						
(Conventional, 30-year, Fixed-rate)						
Maricopa County	Nov.	10.2	–1.0	–4.7	NA	NA
POPULATION ESTIMATES						
(In Thousands)						
Maricopa County	3rd Qtr.	2,024	0.5	2.0	NA	NA
Arizona	3rd Qtr.	3,492	0.5	1.9	NA	NA
ELECTRICAL POWER SALES						
(In Millions of Kilowatt Hours)						
Arizona	Oct.	3,597	–8.0	19.8	37,191	13.5

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University.

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Population Estimates and Projections

Slow Growth Next Few Years, Then More Rapid

Arizona's population growth, already subpar for nearly two years as of the end of 1988, likely will remain below average for another three to four years. The longer-term outlook, however, remains quite favorable for further growth; the current period of slow growth represents the low phase of a cycle.

The Center for Business Research (CBR) has produced quarterly population estimates since 1985. Now, after a thorough review of methodology, a revised series has been produced, but differences from the original series are quite small. Except for near-term changes (to 1990), the CBR's population projections differ little from those presented in the May 1988 issue of *Arizona Business*. (Most of the text in that article remains relevant and has not been repeated here.)

POPULATION ESTIMATES

The CBR estimates are derived from housing data — change in occupied housing units and first-time electrical connections — in Maricopa County. They are tied to the 1970 and 1980 censuses and are controlled to the 1985 special census as well. Annually, they are compared to estimates produced by very different methods by the U.S. Bureau of the Census. The CBR mid-year 1987 estimate is 9,000 higher than that of the Census Bureau.

The CBR's estimating technique proved to be accurate for Maricopa County — the 1985 special census was missed by only 3,000 people — but its future accuracy is dependent on consistent accuracy of census counts. Should the 1990 census reduce the undercount believed to have occurred in earlier censuses through the use of new techniques (some being tested locally), the CBR estimates in 1990 may fall short of the counted number of residents.

Based on Maricopa County data and statewide employment figures, the CBR estimates total Arizona population each quarter, but the figures are not as accurate as those for the Phoenix area. Annually, the CBR estimates population for all 15 counties. In the review process just completed, the CBR estimates of the population of Pima County and non-urban Arizona were raised by approximately 15,000 persons as of mid-year 1987, in part because of the population estimates produced by the Arizona Department of Economic Security. Compared to the Census Bureau estimates, the CBR figures for Arizona are 35,000 higher at mid-year 1987; 22,000 of the difference is in Pima County. The Census Bureau ties its estimates to the 1985 special census in Pima

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County, which almost certainly undercounted the population.

The original and revised quarterly estimates for Maricopa County since the 1985 special census are shown in Table 1. The maximum difference in population change in any quarter is 2,000, frequently offset in the following quarter. The net effect is that the third quarter 1988 population estimate is only 1,000 higher than previously reported.

The short time period examined in Table 1 illustrates the extreme cyclicality of Phoenix area economic and population growth. This is even more obvious in the annual data shown in Table 2. Despite record net in-migration to the Phoenix area in the mid-1980s, the average of the 1980s is about the same as for the 1970s. Net migration in the rest of the state has been weaker in the 1980s.

EMPLOYMENT LEADS MIGRATION

The primary explanation for short-term fluctuations in net migration is the cyclicality of job availability. Employment changes lead variations in net migration by a substantial time period both in Maricopa County and in the state as a whole.

Based on quarterly data since 1970, changes in wage and salary employment two quarters earlier are highly correlated with net migration. The highest correlation, however, is with construction employment, which has the longest lead time of any sector at roughly four quarters. The relationship between FIRE (finance, insurance, and real estate) and net migration also is strong, but with a lead time of only one quarter. Using annual data, the correlation between changes in construction employment and net migration is even stronger, with employment leading by one year. These relationships allow reasonably accurate projections of net migration to be made up to one year in the future, based on changes in employment that have already occurred.

The relationship between employment changes and net migration is strongest in Maricopa County. Because the Phoenix area accounts for two-thirds of the state's economic activity, the leading relationship holds for state totals as well. In Pima County and rural Arizona, however, all correlations between employment changes and net migration are too weak to draw any conclusions.

TABLE 1
QUARTERLY POPULATION ESTIMATES IN THOUSANDS
MARICOPA COUNTY

			Net Migration	
Quarter/Year	*Population*	*Change*	*Revised*	*Original*
3/85	1,838*	22	17	19
4/85	1,858	20	15	16
1/86	1,880	22	17	18
2/86	1,901	21	16	15
3/86	1,920	19	14	14
4/86	1,940	20	14	14
1/87	1,956	16	10	12
2/87	1,969	13	8	6
3/87	1,983	14	8	8
4/87	1,994	11	6	5
1/88	2,007	13	7	7
2/88	2,015	8	3	1
3/88	2,025	10	4	5

*Special census count

Source: Center for Business Research, College of Business, Arizona State University.

TABLE 2
POPULATION CHANGE
(In Thousands)

Fiscal		**Total Change**				**Net Migration**		
Year	*Arizona*	*Maricopa*	*Pima*	*Non-urban*	*Arizona*	*Maricopa*	*Pima*	*Non-urban*
1981 ...	81	51	12	18	52	36	7	9
1982 ...	73	44	14	15	43	28	9	6
1983 ...	72	43	13	16	42	27	8	7
1984 ...	104	70	16	18	73	53	11	9
1985 ...	123	86	18	19	90	67	13	10
1986 ...	126	85	18	23	92	65	13	14
1987 ...	103	68	15	20	67	46	9	12
1988 ...	78	46	13	19	42	24	7	11
				AVERAGES				
1961-70	47	30	9	8	24	19	5	0
1971-80	94	54	18	22	70	42	14	14
1981-88	95	62	15	18	63	43	10	10

Source: Center for Business Rerearch, College of Business, Arizona State University (1981 - date) and U.S. Bureau of the Census (1961-80).

SHORT-TERM OUTLOOK

Employment gains through much of 1988 were quite weak across the state. Construction employment continued to decline, though not quite as rapidly as in 1987. Thus, net in-migration should remain slow through most of calendar year 1989. Gradual improvement is foreseen, however, from the very weak net inflows of the second and third quarters of 1988. Net in-migration during those quarters was the least since the mid-1960s, except for a few quarters in 1975-76.

Despite the modest improvement that is presumed in early 1989, net in-migration during 1988-89 is likely to be less than in 1987-88 (see Table 3). Assuming national economic conditions do not deteriorate too much prior to mid-1990, population gains in 1989-90 should be higher, but still well below average. The improvement probably will be greatest in the Phoenix area. Pima County likely will continue to be troubled by its manufacturing sector. Rural Arizona, not as much affected by the construction slump, did not decline as much from 1986 to 1988, thus is not likely to show much improvement in 1989-90.

Alternate scenarios are not presented for the next one and one-half years because flows are not likely to be substantially different from those shown in Table 3. With significant problems in several industries — e.g. construction, finance, real estate, health services — a set of events that would lead to higher net in-migration in the near-term is difficult to envision. In contrast, net inflows in 1989-90 could be somewhat weaker than shown if deterioration in the national economy occurs, accompanied by rising interest rates, or if economic conditions in Arizona continue to worsen at a greater rate than anticipated.

LONG-TERM OUTLOOK

The long-term outlook (see Table 4) is not much different from that presented last year. The population change projected between 1990 and 2010 in the "middle" scenario is about the same. The slightly lower projected population reflects the weakness likely during the next couple of years. On a yearly basis, assuming a national recession sometime around the end of 1990, population gains are projected to remain weak through fiscal year 1992. However, a strong expansion is expected to ensue thereafter.

Lesser population gains are projected in the "low" scenario, especially between 2000 and 2010. This scenario corresponds at the state level to the projections issued in 1988 by the U.S. Bureau of the Census. Given the sophistication and interstate interactions of their model, the possibility of slower growth should not be dismissed. Both net natural increase and net migration are lower in this alternative, largely due to the aging of the baby-boom generation.

The "high" scenario is nearly the same as presented last year. It projects population gains roughly equal to those in the "high 2" alternative, the state's "official" projections from 1986, except during the 1990s in Maricopa County. The latter is viewed by the CBR as being unrealistic. A new set of projections currently are underway at the Arizona Department of Economic Security and are expected to reflect much less growth than previously projected.

CALIFORNIA MIGRATION

In an attempt to provide a rationale for the very high inflows projected in the "official" series, the idea of an increased flow of migrants from California to Arizona has been advanced by proponents of faster growth. A review of historical data and current information from California, however, does not provide much support for this theory. Arizona has received a relatively steady net inflow from California for many years. Further, California's problems, which would prompt a future outflow, are not new.

During the 1970s, California experienced substantial out-migration — similar to that theorized for the future — to the extent that its net flow was negative in some years. Net out-migration occurred to states throughout the West. The net flow to Arizona was less than that to Oregon, Washington, Nevada, Texas, Idaho and Utah — only 6 percent of the net outflow to all of the western states. When each of these western states experienced economic problems in the early- to mid-1980s, the outflow from California slowed sharply. While the other western states were slumping, the Arizona economy was booming, but the net flow from California to Arizona did not change. When opportunities elsewhere were limited, Californians chose to stay in-state rather than move to Arizona.

Current information from California does not provide much indication that conditions will be different

TABLE 3
LATEST POPULATION ESTIMATES AND SHORT-TERM POPULATION PROJECTIONS
(In Thousands)

Fiscal Year	*Arizona*	*Maricopa*	*Pima*	*Non-urban*	*Arizona*	*Maricopa*	*Pima*	*Non-urban*
	Total Population				**Change**			
1988 ...	3,497	2,015	654	828	78	46	13	19
1989 ...	3,570	2,060	664	846	73	45	10	18
1990 ...	3,655	2,115	675	865	85	55	11	19
	Net Natural Increase				**Net Migration**			
1988 ...	37	22	6	9	42	24	7	11
1989 ...	37	23	5	9	36	22	5	9
1990 ...	38	24	5	9	47	31	6	10

Source: Center for Business Research, College of Business, Arizona State University.

TABLE 4
POPULATION PROJECTIONS BY DECADE, FOUR SCENARIOS
(In Thousands)

	1980	1990	2000				2010			
	Census	*Projection*	*Low*	*Middle*	*High*	*High2*	*Low*	*Middle*	*High*	*High2*
Total Population										
Maricopa Co.	1,509	2,115	2,700	2,815	2,880	3,250	3,170	3,570	3,705	4,050
Pima Co.	531	675	795	825	900	975	900	1,000	1,150	1,260
Non-urban Ariz.	677	865	1,025	1,070	1,120	1,095	1,150	1,285	1,415	1,360
Arizona	2,717	3,655	4,520	4,710	4,900	5,320	5,220	5,855	6,270	6,670
Ten-Year Population Change										
Maricopa Co.	538	606	585	700	765	990	470	755	825	800
Pima Co.	180	144	125	150	230	240	105	175	250	285
Non-urban Ariz.	223	188	155	205	250	210	125	215	295	265
Arizona	941	938	865	1,055	1,245	1,440	700	1,145	1,370	1,350

Source: Center for Business Research, College of Business, Arizona State University. 1980 Census data are from the U.S. Bureau of the Census. The 'High2' scenario is the latest (1986) population projections from the Arizona Department of Economic Security.

in the future. In the last year, many firms — especially in the aerospace industry — invested in the Los Angeles area by taking out building permits for new production facilities. Many of those firms considering a move out of the Los Angeles area are looking at the California desert east of L.A., which offers reduced costs, less congestion, less pollution, and closer access to L.A.

While some increased outflow from California is likely to occur in coming years, all of the West will be competing for those firms and people. Californians have shown a clear preference for certain states — Arizona not among them. The idea that Arizona will greatly benefit from this phenomenon represents a hope rather than a likelihood, and thus belongs in an optimistic scenario, not in the only projection series offered. To achieve the flows projected in the "high 2" scenario, some 400,000 *additional* people would have to migrate to Arizona in the 1990s beyond the roughly 650,000 projected by the CBR. This represents a huge increase over the 600,000 to 700,000 received both in the 1970s and 1980s.

– Tom R. Rex
Research Manager

Population Growth and Housing

In the January 1988 issue of *Arizona Business*, ties between the construction industry, the overall economy and population growth were analyzed. For the Phoenix area, it included projections of population growth and housing indicators such as absorption, vacancies and starts. At the time it was written, it was one of the first published reports of the severity of the area's disequilibriums and the likelihood of significantly subpar growth for several years. It was viewed in some circles as pessimistic, yet a current review of its accuracy shows that where it erred, it missed by being too optimistic.

Population growth was projected to be 62,000 in the 1987-88 fiscal year; it now is estimated to have been 46,000. New housing units authorized were projected to be 26,000; they totalled 22,200 instead. Vacancy rates of apartments were projected to peak in winter 1987-88, which they did, but instead of lowering modestly they have remained constant at this high level.

Further, vacancy rates on housing units other than apartments increased during 1988. More than 55,000 units, 7 percent of all housing, were vacant in third quarter 1988. Even if an average of only 20,000 units per year are built from 1989 to 1992, the overall housing vacancy rate will not attain historically average levels of approximately 3 percent by the end of 1992, if population growth is similar to that projected in the accompanying article. With similar situations present in commercial real estate, a strong construction upturn is highly unlikely before 1992 and may not occur until 1993.

Complete Report Available

This article summarizes a longer report "Population Estimates and Projections," which discusses historical population growth, the CBR's estimates between 1980 and 1988, and population projections, both near-term and long-term. It includes numerous tables of data and a discussion of methodology used to estimate and project population. Copies of the report are available from the Center for Business Research, College of Business, Arizona State University, Tempe, Arizona 85287; (602) 965-3961.

Valley Inflation Jumps in Fourth Quarter

The seasonally adjusted inflation rate in the Phoenix metropolitan area surged to 2.0 percent in fourth quarter 1988 from the approximately 1 percent per quarter rate of the previous several quarters. Except during first quarter 1987, when soaring gasoline prices were almost solely responsible for a sharp advance, the overall inflation rate has not risen as much in a single quarter since 1981.

Before seasonal adjustment, the Metropolitan Phoenix Consumer Price Index climbed 1.3 percent to 122.5 (1982-84 = 100). The annual advance of 5.0 percent, while higher than in the three previous quarters, was not much different from the 4.7 percent rate recorded in fourth quarter 1987.

COMPONENT INDEXES

Unexpectedly higher inflation was widespread across the CPI's major categories, but generally can be traced to just a couple of subcategories in each case. As seen in Table 1, each major category except apparel and upkeep registered a greater advance than in the third quarter; increases were particularly large in transportation, medical care, and entertainment. In general, the third quarter's inflation rate was held down by a large number of sales; relatively few sales occurred in the fourth quarter.

Food and Beverages

During the last three quarters of 1988, food and beverage price increases were greater than they had been in several years, an expected result of the summer drought. In the fourth quarter, food at home prices rose 2.2 percent, about as anticipated, but prices of food away from home and alcoholic beverages hardly changed.

Within the grocery subcategory, prices of cereal and bakery products declined, partially offsetting a large gain in the third quarter. Prices of dairy products dipped for the third time in four quarters. But fruit and vegetable prices soared. Fresh fruit prices were up 7 percent in fourth quarter 1988, 59 percent over fourth quarter 1987. Fresh vegetable prices rose 27 percent in the quarter and 39 percent in the year.

Housing

Shelter costs again barely climbed (see Table 2). Renters' costs dropped for the third straight quarter and the seventh time in the last nine quarters. Homeowners' costs again rose modestly.

In contrast, costs of household furnishings and operations advanced by the most in several years. A lack of seasonal sales of furniture and bedding was the single greatest factor. A large increase in fuel and other utility costs is traceable almost entirely to a huge boost in the cable TV category, which experienced both a return from sale prices and price hikes in the same quarter.

Transportation

Transportation costs rose the most since the gasoline-induced gains of early 1987. Two subcategories were responsible for most of the acceleration. Auto insurance premiums were boosted 10 percent, on the heels of a 5 percent advance in the third quarter. Public transportation costs jumped 10 percent as well, mostly due to airline fares returning to earlier levels.

A big gain in prices of auto parts followed declines in earlier quarters. Gasoline prices dropped 1 percent while auto prices rose moderately.

Medical Care

After a period of price stability in late 1987 and early 1988, increases in medical care costs again exceeded the overall inflation rate. Hospital cost increases continued to account for much of the category's gain, though the index for professional services also rose by a relatively large amount in the fourth quarter.

Other Categories

Entertainment costs surged, with big gains for toys and hobbies and for entertainment services. While apparel cost increases moderated, prices were 10 percent higher than at the end of 1987. The index for other goods and services climbed modestly.

COMPARISON AREAS

Before seasonal adjustment, inflation in the Phoenix area was slightly higher than the national average, with mixed results by category (see Table 3). During the calendar year, inflation in the Phoenix area was higher, due primarily to larger gains in the transportation and apparel and upkeep categories.

OUTLOOK

The fourth quarter's inflation rate probably was an aberration. Quarterly rates are expected to be in the 1.0 to 1.5 percent range in 1989. This would result in a year-end rate comparable to 1988's 5.0 percent, but higher year-over-year rates would be measured early in 1989. Next month's year-end wrap-up issue will examine 1988-89 inflation in more detail.

– Tom R. Rex
Research Manager

TABLE 1
PERCENT CHANGES IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Seasonally Adjusted from Preceding Quarter							
Expenditure Category	*Relative Importance*	*1st 1987*	*2nd 1987*	*3rd 1987*	*4th 1987*	*1st 1988*	*2nd 1988*	*3rd 1988*	*4th 1988*
ALL ITEMS	100.0	2.1	1.1	0.7	0.9	0.8	1.3	0.9	2.0
Food and Beverages	16.4	–0.2	0.5	0.9	0.6	0.9	2.0	1.3	1.4
Housing	42.4	0.5	0.2	0.5	2.3	1.0	0.2	0.4	1.7
Apparel and Upkeep	5.8	–2.5	2.8	2.7	0.9	2.3	2.9	3.6	1.5
Transportation	19.1	8.1	3.0	0.9	-2.0	–0.5	2.4	1.0	3.1
Medical Care	6.7	1.8	2.7	–2.1	0.9	0.3	3.3	0.4	2.8
Entertainment	4.6	2.4	–1.2	2.0	3.1	1.2	0.1	1.2	3.6
Other Goods and Services	5.0	2.0	0.3	2.9	0.6	2.2	0.9	0.8	1.1

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
Fourth Quarter 1988

	Index (1982-84 = 100)		Percent Change from	
Expenditure Category	*Last Quarter*	*This Quarter*	*Last Quarter**	*Year-Ago Quarter*
ALL ITEMS	120.9	122.5	2.0	5.0
Food and Beverages	120.4	121.7	1.4	5.8
Food	119.3	120.6	1.4	5.2
Food at Home	121.1	123.4	2.2	7.9
Cereal and Bakery Products	138.3	133.2	–3.6	5.0
Meats, Poultry, Fish, and Eggs	114.6	116.5	1.6	6.6
Dairy Products	112.0	111.3	–0.1	–1.0
Fruits and Vegetables	145.7	158.2	10.1	34.4
Other Food at Home	112.4	115.8	2.7	3.4
Food Away from Home	117.4	117.6	0.4	2.3
Housing	116.9	117.0	1.7	3.5
Shelter	115.6	115.6	0.2	1.0
Renters' Costs**	118.7	116.9	–1.1	–1.8
Homeowners' Costs**	118.3	119.1	0.7	2.4
Fuel and Other Utilities	122.7	121.2	4.8	7.7
Gas (piped) and Electricity	125.9	115.3	2.3	4.3
Household Furnishings/Operations	115.6	116.8	3.4	6.8
Apparel and Upkeep	120.7	124.7	1.5	10.1
Transportation	117.2	120.7	3.1	6.1
Private Transportation	118.1	120.1	2.1	5.5
New and Used Cars	130.3	132.8	1.7	6.9
Motor Fuels	77.2	75.5	–1.3	–3.2
Public Transportation	107.0	118.8	10.4	8.4
Medical Care	147.0	150.8	2.8	6.8
Entertainment	139.7	144.9	3.6	6.1
Other Goods and Services	133.4	134.3	1.1	5.3

*Seasonally adjusted
**Base period is second quarter 1983.

TABLE 3
METROPOLITAN PHOENIX AND UNITED STATES CONSUMER PRICE INDEXES
Fourth Quarter 1988

	Percent Change from Last Quarter*		Percent Change from One Year Ago	
Expenditure Category	*Phoenix*	*United States*	*Phoenix*	*United States*
ALL ITEMS	1.3	1.1	5.0	4.2
Food and Beverages	1.1	0.7	5.8	5.2
Housing	0.1	0.3	3.5	3.8
Apparel and Upkeep	3.3	6.5	10.1	3.9
Transportation	3.0	1.0	6.1	2.7
Medical Care	2.6	1.4	6.8	6.8
Entertainment	3.7	1.2	6.1	4.2
Other Goods and Services	0.7	2.5	5.3	7.0

*Not seasonally adjusted

Source (Tables 1-3): Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in co-sponsorship with Valley National Bank; other data are from the U.S. Department of Labor, Bureau of Labor Statistics.

Metro Phoenix Economy Declined Again in October

The coincident economic index for the Phoenix area fell for the fifth consecutive month in October, though the 0.3 percent decrease was not as large as the 0.9 percent drop in September. The index was 145.9 (1982 = 100) in October, 1.6 percent below its May peak.

In contrast, the coincident indexes for the Tucson area and for rural Arizona increased for the third straight month in October. Pima County's small 0.2 percent gain, comparable to those of the two prior months, placed its index at 137.6. The index for non-urban Arizona, however, advanced a relatively strong 0.6 percent, up from the modest gains of the two prior months, reaching 129.2. The composite statewide measure dipped 0.1 percent to 141.7.

The economic slowdown had its greatest effect on most of the state between April and July. But in Maricopa County, the worst effects did not occur until September and October. In the seven months after March, the Tucson area economy declined the least in the state. It showed more employment growth, and a smaller increase in its unemployment rate than the other areas. In Maricopa County, each of the four components declined on net during those seven months.

In October, economic performance varied widely across the state. The employment situation (growth in wage and salary employment and change in the unemployment rate) deteriorated significantly in Maricopa County, but was reasonably strong in rural Arizona. The value of commercial building permits rose in the Phoenix area, but declined elsewhere. Retail sales increased slightly throughout the state.

A preliminary look at November data suggests that the state's economy performed better. The unemployment rate fell throughout the state and employment rose in rural Arizona. For the first time since March, all three areas probably posted monthly gains. Annual growth rates should also start to improve, after dropping to approximately 1 percent through October.

– Tom R. Rex
Research Manager

Purchasing Indicators Flat in December

The Arizona economy was "on hold" in December, as growth in new orders stopped and net declines were registered both in employment and in purchased materials inventory levels. Prices continued to increase, but at a slower pace than in the earlier part of the year.

Yet there are encouraging signs: the inflation rate is moderating somewhat, production still is positive, vendor backlogs appear to be holding, and inventories are well under control.

CAPITAL EXPENDITURE PLANS

The special question, asked each December, covers *anticipated expenditures* for new plant and equipment during 1989. For the first time since December 1982, the answers indicate that a contraction in capital expenditures is anticipated. While the new decrease was small, it shows that Arizona firms view 1989 with caution and do not expect to add to capacity. Thus, capital expenditures probably will not be a factor stimulating overall economic growth.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

TABLE 1
DECEMBER PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (December compared to November)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	42	56	2
Delivery time from vendors	36	58	6
Purchased materials inventory level	21	43	36
New orders received	32	36	32
Production	28	48	24
Employment	12	69	19
Purchases	35	37	28

TABLE 2
ANTICIPATED EXPENDITURES FOR NEW PLANT AND EQUIPMENT

	Percent of Purchasing Managers Indicating Each Response		
	Higher	*Same*	*Lower*
1989 compared to 1988	31	31	38
1988 compared to 1987	42	28	30
1987 compared to 1986	53	34	13
1986 compared to 1985	48	33	19
1985 compared to 1984	53	28	19
1984 compared to 1983	53	31	16
1983 compared to 1982	27	26	47
1982 compared to 1981	40	19	41

Source (Tables 1 and 2): Purchasing Management Association of Arizona, Purchasing Management Association of Southern Arizona, and the Northern Arizona Group.

Arizona Leading Index Moves Up in November

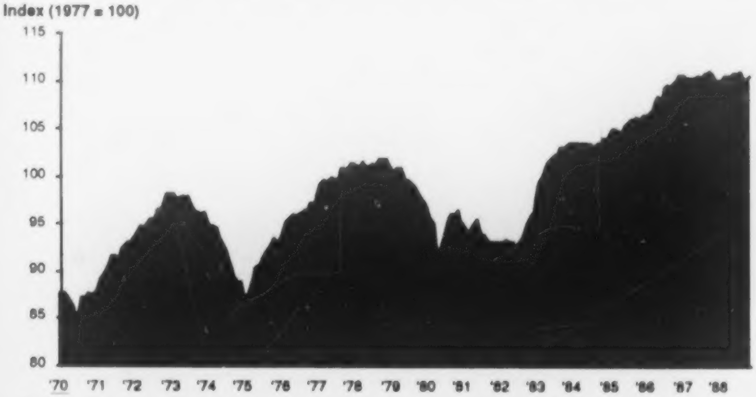
The Arizona Index of Leading Economic Indicators rose in November to 110.7. The November figure was 0.5 percent higher than the revised 110.2 figure recorded in October, but was 0.4 percent below the 111.1 figure for November 1987 (1977 = 100).

Providing the biggest boost to the index was an increase in seasonally adjusted residential building permits. Manufacturing hours worked, the money supply, delivery times, and employment were also positive influences. Inventories, new orders, production, and sensitive materials prices had a negative impact. Unemployment insurance claims were unavailable.

ANALYSIS

The path of the Arizona Index of Leading Indicators from 1970 to the present is illustrated in Figure 1. The graph clearly shows the length and strength of the current expansion compared to those which occurred earlier. The index started rising in 1982 when the last recession was about to end and continued its upward course until the early part of 1987. The prior expansions of the early and mid-seventies are also evident in the graph.

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution*			
	Aug.	*Sept.*	*Oct.*	*Nov.*
Delivery Time*	.02	–.08	–.03	.01
Inventory Levels*	–.06	–.06	.14	–.12
New Orders*	–.02	–.08	.06	–.03
Production*	–.06	.01	.02	–.01
Employment*	.05	–.03	–.10	.01
Residential Building Permits	.31	–.24	–.20	.38
Unemployment Insurance Claims	.00	.00	.00	.00
Average Workweek, Manufacturing	.05	.00	–.07	.12
Money Supply	–.10	–.11	–.13	.10
Change in Sensitive Materials Prices	.01	–.07	–.08	–.02
OVERALL INDEX CHANGE (%)	.20	–.67	–.40	.45

*The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

The earlier business cycles show a pattern of rapid increase followed by a period of very slow growth which finally drops into recession. The current expansion has moved through the period of rapid increase into the part of the cycle characterized by slow growth. The general Arizona economy would seem to be in the midst of a normal business cycle rather than the "melt down" suggested in the national press. The problems in Arizona's construction industry have had an impact on the rest of the state's economy, but we do appear to be weathering the storm.

OUTLOOK

The index suggests that the current slow pace of the Arizona economy will continue for at least the first half of 1989. Further, the pattern of slow growth could continue for some time longer, provided the national economy remains healthy.

– **Tracy L. Clark,** *Economist*
Economic Outlook Center

The Arizona leading index is based on 10 economic indicators, combined and weighted to project the pace of economic activity several months ahead. Five of the components come from a monthly survey of Arizona purchasing managers conducted by Dr. Harold Fearon. The Arizona Index of Leading Economic Indicators is sponsored by Citibank (Arizona).

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Year-to-Date Percent Change from Year Ago
GROSS STATE PRODUCT						
(In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	2nd Qtr.	59.221	2.4	6.0	NA	NA
Arizona - 1982 Dollars	2nd Qtr.	47.827	1.9	2.1	NA	NA
COINCIDENT ECONOMIC INDEXES						
(1982 = 100)						
Arizona	Oct.	141.7	–0.1	1.0	NA	NA
Metropolitan Phoenix	Oct.	145.9	–0.3	0.7	NA	NA
Metropolitan Tucson	Oct.	137.6	0.2	1.8	NA	NA
Non-urban Arizona	Oct.	129.2	0.6	1.3	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	4th Qtr.	122.5	1.3	5.0	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Nov.	110.7	0.5	–0.4	NA	NA
BUILDING PERMITS						
(Total Dollar Value in Thousands)						
Maricopa County	Oct.	253,726	9	–28	2,943,111	–14
Pima County	Oct.	28,892	5	–27	393,017	–22
Balance of State	Oct.	46,059	–15	–31	580,368	0
Arizona	Oct.	328,677	4	–28	3,916,496	–13
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Oct.	1,561	11	–36	19,105	–23
Pima County	Oct.	352	–11	–2	4,636	–18
Balance of State	Oct.	708	–2	–32	8,129	–11
Arizone	Oct.	2,621	4	–32	31,870	–20
HOME SALES						
Maricopa County - Number	Nov.	3,240	–34	–29	47,110	–15
Maricopa County - Median Price	Nov.	82,000	1.2	–0.2	80,375	0.5
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	3rd Qtr.	92	–2.1	2.2	NA	NA
Metropolitan Phoenix - Resale Homes	3rd Qtr.	119	–1.7	5.3	NA	NA
MORTGAGE INTEREST RATES						
(Conventional, 30-year, Fixed-rate)						
Maricopa County	Dec.	10.6	3.9	0.0	NA	NA
POPULATION ESTIMATES						
(In Thousands)						
Maricopa County	3rd Qtr.	2,025	0.5	2.1	NA	NA
Arizona	3rd Qtr.	3,507	0.4	2.0	NA	NA
ELECTRICAL POWER SALES						
(In Millions of Kilowatt Hours)						
Arizona	Oct.	3,597	–8.0	19.6	37,191	13.5

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University.

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Metro Phoenix Home Appreciation

Rates Slow Significantly; Townhouses Depreciate

Single-family homes in the Phoenix metropolitan area continued to appreciate during 1988, though not as much as in 1987. More townhouses depreciated during the year than gained value.

The median rate of appreciation for single-family homes declined to approximately 1.8 percent in 1988, down from 2.4 percent in 1987, and was lower than in any year since the appreciation rate study began in 1981. Most townhouses and condominiums (hereafter referred to as townhouses or townhomes) did not appreciate; the median townhouse sold during 1988 depreciated 0.8 percent. Appreciation rates of both single-family homes and townhomes were significantly lower than the 1988 Metropolitan Phoenix inflation rate of 4.1 percent.

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The decline in the appreciation rate has further extended the length of time the typical seller utilizing the services of a realtor must own their home in order to break even. During 1988, the annual rate of 1.8 percent means that homeowners selling through a realtor, as a majority of all sellers do, had to hold their home at least 3-1/2 years to break even. Realtors' fees, although often necessary to sell the home at all, simply compounded the depreciation of townhouses.

Of all homes sold more than once between 1981 and 1988, 38,257 constitute the single-family data base after removing sales that did not meet the selection criteria. Another 3,369 homes make up the townhouse data base. Throughout this article, less detail is provided on townhomes because of their relatively small number.

HOUSING APPRECIATION, 1981-88

The single-family home appreciation rate has slowed gradually since 1981, but the decline during 1988 was significantly greater than during any prior year (see Figure I, page 2). Even though some townhouses posted positive appreciation rates, the median townhouse sold in 1988 brought less than its original purchase price. The townhouse rate has decelerated more sharply than the single-family rate since the townhome portion of the study began in 1984; the rate in 1988 was

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–0.8 percent, down from 0.0 during 1987.

Home appreciation has not kept up with inflation in consumer prices since 1984 (see Table 1). Between 1983 and 1988, the metro Phoenix consumer price index rose 23.8 percent while the national price index rose 22.6 percent. Phoenix area homes appreciated only 18.2 percent (compounded quarterly) during the same time.

The median sales price for both single-family homes and townhomes increased more than either the appreciation or inflation rates. However, the higher rates are due to increases in the size of the typical home; the median sales price per square foot increased less than the inflation rates, but still more than the appreciation rates.

By Price

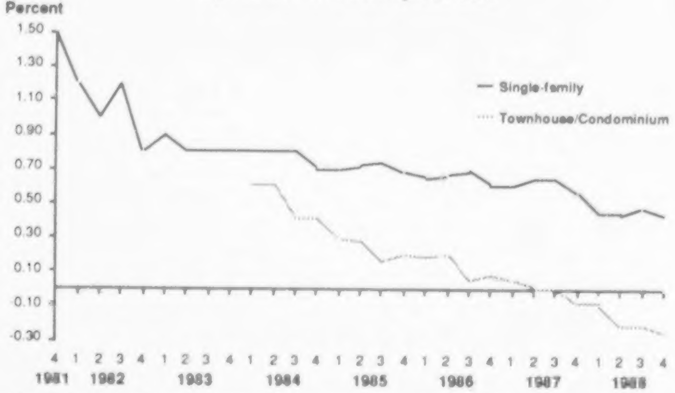
The price of the home exerts the strongest influence on the rate of appreciation. Single-family homes that sold for more than $100,000 appreciated about three times as fast as those that sold for less than $60,000. The overall median rate of appreciation for both new and resale homes is inhibited by the abundance of lower-priced homes. All price ranges of both new and resale homes greater than $100,000 appreciated more than 3 percent per year.

This relationship between price and appreciation also holds after adjusting the sales price for the size of the home. Homes that sold between 1981 and 1988 for a price in

FIGURE I

MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION

By Quarter of Subsequent Sale



Note: Quarterly data for townhouses/condominiums are not available prior to 1984 due to an insufficient number of sales.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

TABLE 1
INFLATION MEASURES

	Percent Change*						
	1983	*1984*	*1985*	*1986*	*1987*	*1986*	*1983-88 Total*
Metropolitan Phoenix Consumer Price Index	1.6	5.8	5.0	1.3	4.1	4.1	23.8
U.S. Consumer Price Index	3.2	4.3	3.6	1.9	3.7	4.1	22.6
Phoenix Area							
All single-family homes:							
Appreciation rate	3.6	3.2	2.9	2.8	2.5	2.0	18.2
Median sales price	4.8	6.3	4.0	6.5	5.0	0.1	29.7
New single-family homes:							
Appreciation rate	5.7	4.7	4.8	4.2	3.7	3.0	29.1
Median sales rice	6.0	9.9	8.1	11.3	7.6	4.3	57.3
Existing single-family homes:							
Appreciation rate	2.9	2.7	2.6	2.4	2.1	1.7	15.3
Median sales price	4.6	4.8	3.2	2.0	3.5	0.5	20.0
Median sales price per-square-foot	2.9	3.0	2.2	3.1	2.2	–0.3	13.8
All townhouses and condominiums:							
Appreciation rate	NA	NA	1.3	0.7	0.1	–0.5	NA
Median sales price	1.8	8.8	1.0	6.8	–2.9	–1.5	14.3
Existing townhouses and condominiums:							
Appreciation rate	NA	NA	1.5	1.1	0.2	–0.5	NA
Median sales price	2.9	3.3	–1.6	2.6	–2.9	–0.8	3.4
Median sales price per-square-foot	3.3	2.5	–1.4	3.6	–0.7	–1.2	6.1

*Calculated at a quarterly compound rate. Appreciation rates in this table may differ slightly from those in the rest of the report due to the different method of compounding.

NA: Not available due to insufficient number of sales.

Source: Arizona Real Estate Center, College of Business, Arizona State University. U.S. Consumer Price Index is from the U.S. Department of Labor, Bureau of Labor Statistics. Metropolitan Phoenix Price Index is from the Center for Business Research, College of Business, Arizona State University.

excess of the median $55 per square foot appreciated 3.9 percent per year, compared to a rate of 2.1 percent per year for less expensive homes. This relationship is the same as last year, when a median per-square-foot amount of $54 was used.

New single-family homes that sold for more than $200,000 had the highest rate of appreciation between 1981 and 1988—about 6.6 percent annually (see Table 2). All categories of new single-family homes selling for $90,000 or more had rates in excess of the 3.7 percent rate for all new homes, while all categories under $90,000 had rates below to the overall median.

For resale single-family homes, the highest rate of appreciation (4.6 percent) occurred for homes selling for $200,000-299,000, followed by homes selling for $300,000 or more. The difference between rates for new and resale homes increased as

TABLE 2
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Price Range
Percent Change Per Year, 1981–88

	Single-Family			Townhouse/ Condo
	Total	*New*	*Resale*	
Less than $40,000	–0.8	*	–0.6	–4.0
40,000–49,999	0.6	0.4	0.6	–0.8
50,000–59,999	1.7	1.4	1.8	0.0
60,000–69,999	2.0	2.0	2.0	0.9
70,000–79,999	2.4	2.8	2.3	1.8
80,000–89,999	2.6	3.5	2.4	1.2
90,000–99,999	2.8	3.8	2.6	1.5
100,000–109,999	3.7	4.9	3.2	0.8
110,000–119,999	3.8	5.3	3.2	1.2
120,000–129,999	3.3	3.8	3.2	1.0
130,000–139,999	3.6	4.6	3.2	*
140,000–149,999	3.6	4.7	3.2	*
150,000–174,999	3.1	5.1	3.0	1.2
175,000–199,999	3.9	6.2	3.6	*
200,000–299,999	4.8	6.6	4.6	*
300,000+	4.0	*	3.8	*
TOTAL	2.4	3.7	2.0	0.3

*Insufficient number of sales

Source: Arizona Real Estate Center, College of Business, Arizona State University.

TABLE 3
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Geographic District
Percent Change Per Year, Single-family Only

*District**		*1981-83***	*1984*	*1985*	*1986*	*1987*	*1988*	*1981-88***
1N	North Scottsdale	3.4	3.5	4.6	3.4	3.7	3.1	3.5
1S	South Scottsdale	2.6	2.8	2.5	2.4	2.3	1.8	2.4
2	Paradise Valley	5.3	4.2	3.5	2.9	3.2	2.8	3.1
3	North Sunnyslope/Moon Valley	2.9	2.6	2.5	2.5	2.1	1.5	2.1
4N	Northwest Phoenix	3.6	3.0	2.2	2.4	2.0	1.2	2.1
4S	Metrocenter	1.7	2.3	2.3	1.8	1.8	1.1	1.7
5	Sun City/Youngtown/Peoria	4.9	5.0	3.6	3.6	2.7	1.5	2.8
6	Glendale	3.4	2.6	2.4	2.0	2.0	1.4	2.0
7	Christown	1.9	2.1	2.0	1.9	1.5	1.2	1.7
8	North Central Phoenix	2.5	3.8	4.4	3.0	2.[illegible]	1.8	2.8
9	East Camelback	2.6	3.9	3.5	2.6	2.8	2.2	2.7
10	East Central Phoenix	2.2	4.5	2.1	3.4	1.7	2.4	2.6
11	Mid-town Phoenix	1.9	3.0	4.3	3.0	3.9	2.2	3.0
12	West Central Phoenix	2.7	2.6	2.7	2.4	2.6	1.4	2.4
13	Maryvale	2.0	2.0	1.8	1.6	1.3	0.3	1.3
14	Downtown/South Central Phoenix	0.0	3.9	0.7	2.7	3.1	3.9	2.8
15	South Phoenix/Ahwatukee	3.3	4.3	2.9	3.6	2.9	2.4	3.0
16N	North Tempe	3.0	0.9	3.0	3.2	2.1	2.0	2.5
16S	South Tempe	3.0	2.2	2.7	2.5	2.1	2.0	2.2
17N	North Mesa	3.8	2.0	2.5	3.2	2.8	1.8	2.4
17S	South Mesa	3.6	3.9	3.6	2.6	2.6	1.9	2.7
18	East Mesa	4.7	3.4	3.7	3.4	3.7	2.4	3.4
19	Chandler/Gilbert	3.4	3.6	4.5	3.6	3.6	2.6	3.4
20	Western Suburbs	4.6	2.2	3.9	2.5	1.5	0.7	1.6
21	Deer Valley	4.0	2.8	2.3	2.3	1.9	1.4	2.0
22W	Sun City West/Rural Maricopa County	6.3	8.6	9.8	7.0	7.8	6.8	7.8
TOTAL, METROPOLITAN PHOENIX		3.4	3.1	2.9	2.6	2.4	1.8	2.4

*District numbers correspond to the districts in Figure II on page 4.

**Median percent change for each year within range.

Source: Arizona Real Estate Center, College of Business, Arizona State University. District designations are copyrighted by the Phoenix Metropolitan Housing Study Committee.

the price increased. Resale homes appreciated at rates equal to or slightly above new homes at prices below $70,000, but the spread between new and resale homes increased to 1.5 percent or more when sales prices were $100,000 or more.

Townhouses showed less upward trending as the price increased, but the lowest priced units did exceptionally poorly. Units selling for less than $40,000 depreciated 4.0 percent, and positive rates were not reached until the price was $60,000 or higher.

New vs. Resale Homes

While a "new" single-family home (defined as one originally constructed between 1981 and 1988, and sold at least twice during that period) appreciated faster than an existing home in all price ranges greater than $70,000, the difference is largely illusory. The more rapid 3.7 percent appreciation rate of new homes—nearly double the 2.0 percent rate of existing homes—lasted only until the first resale of the home.

At least a portion of the gain reflects additional expenses that most buyers of new homes incur in making improvements, such as landscaping, which add to the value of the property. Further, new homes generally are more expensive than resale homes, even on a price-per-square-foot basis. Thus, new homes appreciate faster mainly because of improvements and higher prices.

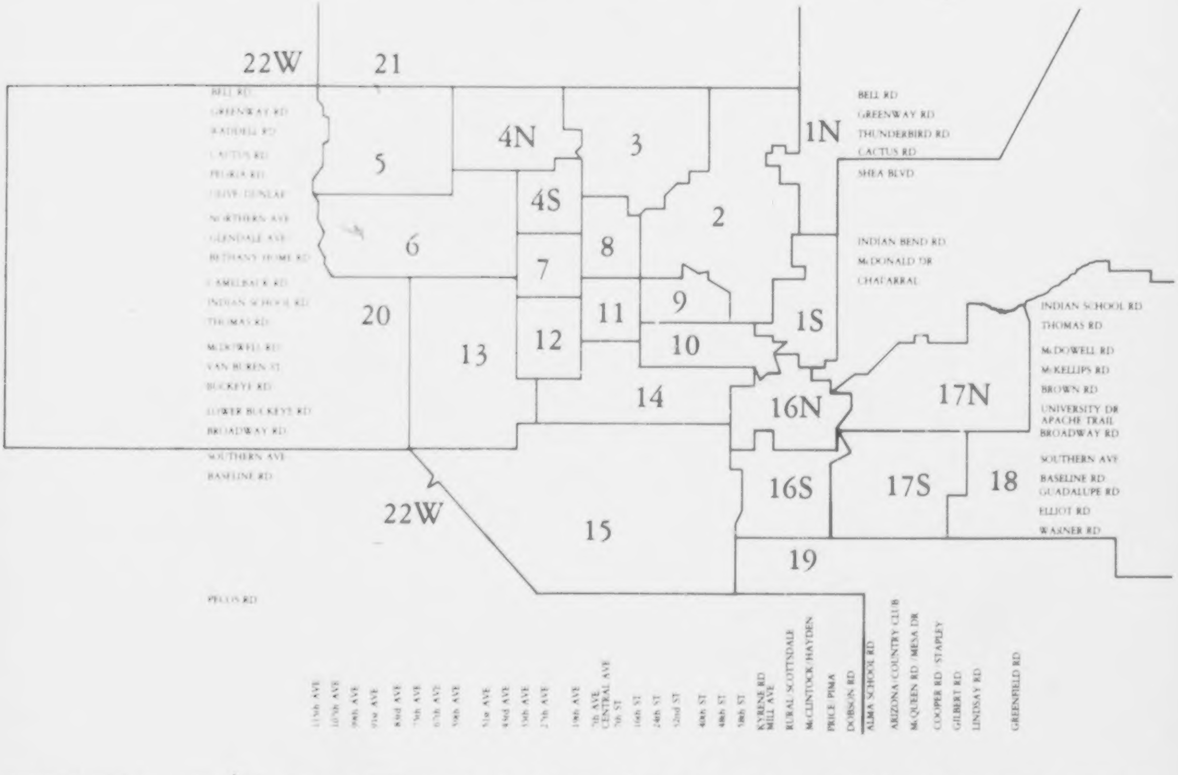
In contrast to single-family homes, new townhomes appreciated no faster than resale units from 1981 to 1988. One cause for the lower townhouse appreciation rate is the smaller price difference between new and existing townhomes. Other factors, however, such as relatively low demand for townhomes, probably better explain the difference.

By Geographic Area

Housing appreciation rates vary throughout the Valley (see Table 3, page 3), but most of the deviation can be explained by variations in price and the proportion of new homes. Rates in 1988 ranged from 1.1 percent to 3.9 percent in all areas except Maryvale and the Western Suburbs, which were slightly lower, and Sun City West, which was higher.

While the 1981-88 appreciation rate in a number of districts (illustrated in Figure II) was significantly different from the metro total in a statistical sense, the difference usually was slight in a practical sense. The

FIGURE II
PHOENIX METROPOLITAN AREA STATISTICAL DISTRICTS


22W
21
1N
4N
3
5
4S
2
6
8
7
9
20
11
1S
12
10
13
14
16N
17N
16S
17S
18
22W
15
19
BELL RD
GREENWAY RD
WADDELL RD
CACTUS RD
PEORIA RD
OLIVE/DUNLAP
NORTHERN AVE
GLENDALE AVE
BETHANY HOME RD
CAMELBACK RD
INDIAN SCHOOL RD
THOMAS RD
McDOWELL RD
VAN BUREN ST
BUCKEYE RD
LOWER BUCKEYE RD
BROADWAY RD
SOUTHERN AVE
BASELINE RD
PECOS RD
BELL RD
GREENWAY RD
THUNDERBIRD RD
CACTUS RD
SHEA BLVD
INDIAN BEND RD
McDONALD DR
CHAPARRAL
INDIAN SCHOOL RD
THOMAS RD
McDOWELL RD
McKELLIPS RD
BROWN RD
UNIVERSITY DR
APACHE TRAIL
BROADWAY RD
SOUTHERN AVE
BASELINE RD
GUADALUPE RD
ELLIOT RD
WARNER RD
115th AVE
107th AVE
99th AVE
91st AVE
83rd AVE
75th AVE
67th AVE
59th AVE
51st AVE
43rd AVE
35th AVE
27th AVE
19th AVE
7th AVE
CENTRAL AVE
7th ST
16th ST
24th ST
32nd ST
40th ST
48th ST
56th ST
KYRENE RD
MILL AVE
RURAL SCOTTSDALE
McCLINTOCK/HAYDEN
PRICE PIMA
DOBSON RD
ALMA SCHOOL RD
ARIZONA/COUNTRY CLUB
McQUEEN RD/MESA DR
COOPER RD/STAPLEY
GILBERT RD
LINDSAY RD
GREENFIELD RD

Note: Districts 1N, 18, 19, 21, 22E and 22W extend to the Maricopa County boundaries. See Table 2 for single-family home appreciation data for all districts outlined above.

Source: Phoenix Metropolitan Housing Study Committee.

annualized rate ranged from 2.0–3.5 percent in all districts except Christown, Maryvale, Metrocenter and the Western Suburbs (which were slightly lower) and Sun City West (which was considerably higher).

The highest appreciation rates occurred in the newer and/or more expensive districts of North Scottsdale and Chandler/Gilbert and in the retirement areas of Sun City West and East Mesa. The lowest appreciation rates were measured in the older and/or less expensive areas of Phoenix, including Maryvale, Christown and Metrocenter.

Between 1981 and 1988, the appreciation rate in most districts declined modestly, similar to the slight deceleration measured Valleywide. In several districts, the rate was erratic from year to year, largely the result of few homes reselling.

The most significant downward trends occurred in Northwest Phoenix, Sun City, Deer Valley and the Western Suburbs. All four areas appreciated faster than the median metro rate of 3.4 percent during 1981-83, but fell below the median rate of 1.8 percent in 1988. Only in Sun City West, North Scottsdale, East Mesa and Chandler/Gilbert did home values consistently appreciate faster than the metro median.

In Sun City West, home appreciation kept up with the Valley's 4.1 percent rate of inflation in 1988—all other areas recorded slower appreciation. During the period from 1981-88, only North Scottsdale, Paradise Valley and Sun City West have kept pace with the Phoenix rate of inflation, although Sun City, East Mesa and Chandler/Gilbert came very close.

The small number of townhouses that sold more than once prevented using a geographic division with the same amount of detail as that for single-family homes. Except in the West Valley, where townhouse sales occurred primarily in Sun City West, the appreciation rate of townhomes was less than that of single-family homes (see Table 4). Townhomes appreciated at rates greater than one percent per year only in Sun City West and the Southeast Valley. In most districts, townhouse rates were two to three percent below single-family rates. The geographic pattern was similar for both townhouses and single-family homes.

OUTLOOK

Little change in the rate of appreciation for either single-family homes or townhouses is likely in 1989, although a further overall decline for 1981–89 is likely as additional low rates are added in 1989. Metro Phoenix's real estate market will likely remain slow during 1989, resulting in continued low rates of appreciation. When the market does rebound (probably in late 1990 or 1991, depending partially on the national economy), appreciation rates should improve as well. However, homes in the Phoenix area should not be expected to appreciate more than the inflation rate even when the market recovers. After the aberrations of the 1970s, the residential housing market has returned to the stable conditions of preceding decades. The general inflation rate, housing affordability and supply–demand relationships remain relatively steady. The possible exceptions might be a continuation of the falling demand for townhouses, particularly resale units, which could lower their rate of appreciation slightly, and an increased rate for selected properties which are being purchased at bargain rates due to defaults and foreclosures. The higher-than-average rates for these homes when they are resold should counter the depreciation the original owner may encounter when selling under distressed circumstances.

The current trend to purchase larger, more expensive homes should continue to widen the spread between appreciation rates on higher-priced and lower-priced homes. However, the new extremes should offset each other except in those areas which are dominated by homes at either end of the price scale. Overall appreciation rates in 1989 can be expected to approximate or be slightly lower than the current levels.

– **Sharla Kivett,** *Research Analyst*
Arizona Real Estate Center

TABLE 4
COMPARISON OF SINGLE-FAMILY HOME TO TOWNHOUSE/CONDOMINIUM APPRECIATION
By Combined Geographic District
Median Percent Change Per Year, 1981-88

District		Single-family	Townhouse/ Condominium
1N, 2	North Scottsdale/Paradise Valley	3.2	0.6
1S	South Scottsdale	2.4	0.6
3, 8	North Central Phoenix	2.2	–0.7
4N, 4S	Northwest Phoenix	2.0	–0.7
5	Sun City/Youngown/Peoria	2.8	0.9
6	Glendale	2.0	–0.2
7, 12, 13	West Phoenix	1.5	–1.0
9, 10, 11, 14, 15	East Central and South Phoenix	2.8	0.1
16N, 16S	Tempe	2.3	0.0
17N, 17S, 18, 19	Southeast Valley	3.0	1.3
20, 22W	West Valley	4.0	4.6
21	North Valley	2.0	0.3
TOTAL, METROPOLITAN PHOENIX		2.4	0.3

Source: Arizona Real Estate Center, College of Business, Arizona State University. District designations are copyrighted by the Maricopa County Housing Study Committee.

Complete Report Available

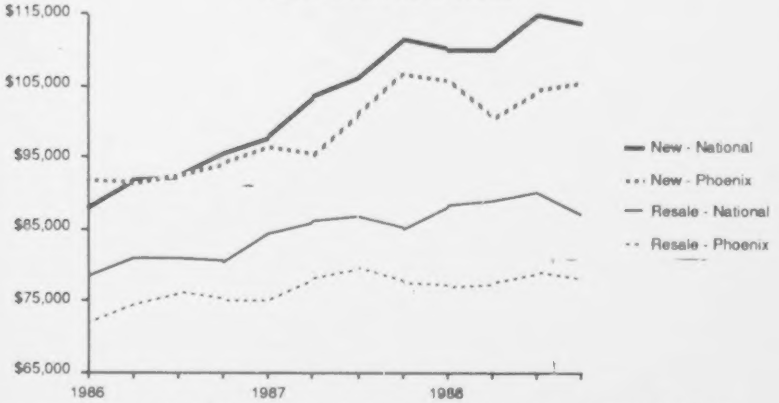
This article summarizes a more detailed report on the appreciation of homes in the Phoenix area during the 1980s. Copies of the complete report, *Focus on Appreciation,* which includes a number of tables with textual interpretation, as well as analysis by district, city, price ranges, and new resale may be obtained for $5.00 by calling or writing the Arizona Real Estate Center, College of Business, Arizona State University, Tempe, AZ 85287; (602) 965-5440.

'88 Valley Home Sales Lowest Since 1982

Fewer homes were sold in 1988 than in any year since the 1982 recession, and price increases were smaller than in any year since 1982. These conditions created a good market for homebuyers, but a potentially difficult market for sellers, resulting in low appreciation rates and a longer-than-average time required to sell the typical home.

Many factors contributed to the weak local real estate market, including prior overbuilding, high vacancy rates, low job growth and low net in-migration. These factors seem to have bottomed out, but the real estate market will continue to feel their impact for some time.

FIGURE I
MEDIAN SALES PRICE OF SINGLE-FAMILY HOMES
National vs. Phoenix Area



Source: Arizona Real Estate Center, College of Business, Arizona State University.

Home sales in 1988 totalled only 49,770, down 13 percent from 1987. New homes, especially townhouses, were hit harder than resale homes; new single-family home sales fell 16 percent, while new townhouse sales fell 48 percent from the prior year. Resale single-family home sales fell 11 percent, but resale townhouse sales were relatively strong. However, resale townhomes were the only housing type in which the median price fell from the prior year, indicating that buyers are taking advantage of low-priced "deals" in this sector. (See Table 1).

The median price of all homes sold in the Phoenix metropolitan area during 1988 was $81,500, an increase of only 0.6 percent from 1987, down from 1987's increase of 3.2 percent over 1986. This advance was only slightly larger than during the 1982 recession, when prices fell 0.1 percent.

New homes accounted for almost all of the price gain; new single-family home prices increased 4.3 percent from 1987 (to $103,950) and new townhouse prices accelerated 8.1 percent (to $83,020). However,

TABLE 1
METROPOLITAN PHOENIX HOME SALES

	Single-Family			Townhouse/Condominium			
Median Sales Price	*Resale*	*New*	*Total*	*Resale*	*New*	*Total*	*Grand Total*
1981	$65,000	$74,800	$65,900	$60,000	$64,400	$60,500	$65,000
1982	65,000	66,100	65,500	59,725	47,025	57,000	64,325
1983	68,000	70,050	68,650	61,450	51,650	58,000	67,000
1984	71,250	76,950	73,000	63,500	62,600	63,100	71,025
1985	73,500	83,200	75,925	62,475	65,050	63,700	74,000
1986	75,000	92,640	80,850	64,110	74,510	68,000	78,500
1987	77,650	99,650	84,900	62,230	76,790	66,000	81,010
1988	78,000	103,950	85,000	61,750	83,020	65,000	81,500
Number of Sales							
1981	35,000	2,410	37,410	5,260	610	5,870	43,280
1982	23,880	3,960	27,840	4,050	1,390	5,440	33,280
1983	33,640	9,560	43,200	5,060	2,540	7,600	50,800
1984	37,180	10,040	47,220	5,170	3,270	8,440	55,660
1985	38,610	10,170	48,780	4,860	2,740	7,600	56,380
1986	35,600	12,680	48,280	7,230	3,910	11,130	59,420
1987	33,230	12,810	46,040	7,530	3,560	11,090	57,130
1988	29,680	10,780	40,450	7,440	1,870	9,310	49,770

Source: Arizona Real Estate Center, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix (1981-85) and Real Estate Evaluation Group (1986-88).

Note: Numbers derived from the two data sources above are not consistent in the breakdown between new and resale homes. Sales and prices for 1986-88 are more accurate in the new/resale breakdown; the number of new sales is underestimated for 1981-85 and the number of resales is overestimated by the same amount. All years are reliable for the total number of sales. Data consistent with the 1981-85 series has been presented monthly in the back page table in *Arizona Business* or can be obtained by writing or calling Arizona Real Estate Center, College of Business, Arizona State University, Tempe, AZ 85287, (602) 965-5440.

the median price-per-square-foot did not increase for any home type, meaning that homebuyers are purchasing larger, more expensive homes rather than paying more for an equivalent home. The new townhouse price increase also indicates that a high proportion of townhouse sales occurred in the higher price ranges.

NATIONAL SALES AND PRICES

The number of resale single-family homes sold nationally increased 3 percent, considerably stronger than the 11 percent decline locally. The median national resale home price increased 4 percent to $89,100, while the local median remained flat at $78,000, reducing national affordability. New single-family home prices were also higher nationally—$112,500 compared to the local median of $103,950. The differential between local new home prices and national prices has been growing throughout the 1980s. (See Figure I, page 6).

OUTLOOK

The Valley's current weak real estate market will continue at least through 1989, possibly worsening slightly during the year. Conditions should improve as effects of local overbuilding are reduced. However, the local economy will need to show improvement in job growth, net inmigration and vacancy rates before recovery will be complete. The combination of all necessary factors for significant improvement should not be expected until late 1990 or 1991, possibly later if the national economy has a negative impact on the local economy.

Home sales during 1989 will probably approximate 1988 levels; the Arizona Real Estate Center expects about 13,000 single-family permits to be issued during 1989, compared to 1988's 13,800 new permits.

– **Sharla Klvett,** *Research Analyst*
Arizona Real Estate Center

1988 Valley Home Affordability Stable

At least one bright spot exists in the Phoenix area real estate market—home affordability. Valley homes were more affordable during 1988 than at any time since the indexes began in 1981.

Mortgage rates have been stable and relatively low during 1988 (though slightly higher than in 1987), while household incomes have been rising. Mortgage rates averaged 10.8 percent in 1988 and 10.6 percent in 1987. (See Table 1).

Prices of new single-family homes have been relatively flat since fourth quarter 1987, resulting in a new home affordability index of 91 during 1988, equal to 1987's index. Resale home prices have experienced little fluctuation since second quarter 1987. Higher household incomes and the slightly higher 1988 mortgage rates combined to result in an affordability index of 121, above 1987's level of 117 and considerably above the new home index level. (Definitions of terms used in this article are available upon request).

The greater improvement in resale affordability compared to new home affordability once again widened the spread between the two indexes to the largest difference ever—30 points, up from last year's record difference of 26 points.

An index of 100 or more indicates that a median-income household is able to qualify for a median-priced home, assuming a 15 percent downpayment on a fixed-rate, conventional, 30-year mortgage and an income qualification factor of 28 percent. During 1988, a median-income household could afford a $96,350 home, more than the median-priced resale home of $78,000, but less than the median-priced new home of $103,950.

(continued)

TABLE 1
HOUSING AFFORDABILITY INDEXES
Metropolitan Phoenix; Single-family Only

			Resale Homes			New Homes		
Year	*Median Gross Monthly Income*	*Effective Interest Rate*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*
1981	$1,990	16.7%	$65,000	$910	61	$74,800	$1,050	53
1982	2,160	16.7	65,000	910	67	66,100	920	66
1983	2,270	13.7	68,000	790	80	70,050	820	78
1984	2,470	14.2	71,250	860	81	76,950	920	75
1985	2,640	12.9	73,500	810	92	83,200	910	81
1986	2,800	10.6	75,000	690	113	92,650	850	92
1987	2,990	10.6	77,650	710	117	99,650	920	91
1988	3,160	10.8	78,000	730	121	103,950	970	91
Quarter								
1st 1988	$3,100	10.7%	$77,000	$720	121	$105,560	$980	88
2nd 1988	3,140	10.8	77,600	730	120	100,540	940	93
3rd 1988	3,170	10.9	79,000	740	119	104,400	980	90
4th 1988	3,210	10.8	78,000	730	123	105,550	990	91

Source: Arizona Real Estate Center, College of Business, Arizona State University. Interest rates are from the Federal Home Loan Bank Board *News;* income is from *Sales and Marketing Management;* national new home prices are from U.S. Bureau of the Census; national resale prices are from National Association of Realtors.

CHANGES IN 1988 AFFORDABILITY

Mortgage interest rates had a very small range during the year, varying from 10.7 percent to 10.9 percent. Interest rates were only slightly higher than in 1986 and 1987, and considerably lower than in any other year of the 1980's.

The price of the median new single-family home increased 4.3 percent, less than the estimated income gain of 5.7 percent. The slight increases in the median price and the mortgage rate resulted in a median monthly housing payment of $970, up 5.4 percent from 1987. The increase in the monthly payment was offset by the increase in monthly incomes, resulting in a year end index of 91, equal to the annual index.

Resale home prices increased negligibly (0.5 percent); when combined with the rise in household incomes, the positive factors outweighed the increase in interest rates, resulting in an increase in the resale index to 123 by year-end, slightly higher than the annual index of 121.

Interest rates have been the strongest determinant of affordability during the 1980s, though the impact has been reduced during the past year due to the lower level of volatility. Even though prices rose 39 percent for new homes and 20 percent for resale homes between 1981 and 1987, monthly housing payments fell 8 percent for new homes and 20 percent for resale homes. This decline in housing payments was due to the six percentage point decline in annualized mortgage rates.

AFFORDABILITY BY INCOME LEVEL

The affordability levels so far have assumed that a household earns the median income. Of course, most people do not earn this amount—half earn more and half earn less. A better idea of affordability for a specific household can be obtained by varying the income, while holding all other factors constant (see Table 2).

For example, a household earning $25,000 annually could still afford a home, but the price would be closer to $62,250—lower than the median-priced resale home. In contrast, a household earning $45,000 could afford a home costing $112,025, higher than the median-priced new home.

NATIONAL AFFORDABILITY

Homes were more affordable locally than nationally; local incomes were higher and prices were lower, although the local mortgage rate was also slightly higher. The spread between local and national affordability levels increased once again over the prior year. The national index value for new single-family homes (82) was nine index points lower than the local level. The resale value of 104 was 17 points lower than the local value.

New home prices nationally have risen 63 percent since 1981, while Phoenix prices rose only 39 percent. Resale home prices increased 35 percent, compared to the local increase of only 20 percent. The median household income rose by a smaller amount between 1981 and 1988 nationally than locally (51 percent vs. 59 percent), and mortgage rates fell by 0.2 percent on both levels.

TABLE 2
AFFORDABLE HOME PRICE AND MONTHLY PAYMENT
By Level of Income
(Metropolitan Phoenix; Effective Interest Rate of 10.8 Percent)

Gross Monthly/Annual Income	Sales Price	Monthly Housing Payment	Affordability Index
$1,675/$20,000	$50,050	$470	100
$2,075/$25,000	62,250	580	100
$2,500/$30,000	74,675	700	100
$2,925/$35,000	87,125	820	100
$3,325/$40,000	99,575	930	100
$3,750/$45,000	112,025	1,050	100
$4,175/$50,000	124,475	1,170	100
$6,250/$75,000	186,725	1,750	100
$8,325/$100,000	248,950	2,325	100

Source: Arizona Real Estate Center, College of Business, Arizona State University.

AFFORDABILITY UNDER DIFFERENT ASSUMPTIONS

The affordability index can change substantially if the assumptions underlying its calculation are varied, as income was varied in Table 2. For example, reducing the amount of the down payment from 15 percent to 10 percent of the purchase price would lower resale home affordability approximately seven index points. If prices had remained constant at 1986 levels, new home affordability would have risen by about four points, but resale levels would have been unaffected.

Shortening the term of the loan would reduce affordability, but not by an appreciable amount until the length drops to approximately 20 years. Lengthening the term past 30 years would have almost no impact.

For the median-income household to afford the median-priced new home, mortgage rates would have had to fall to approximately 9.6 percent, a little over one percent below 1988's level.

Changing the income qualification factor from 28 percent, the upper end of the range set by FNMA, to 25 percent, the lower end of the range, would reduce 1988 affordability by 10-13 index points.

OUTLOOK

Mortgage rates are still the key to home affordability. If mortgage rates rise even slightly during 1989, which is likely, affordability will worsen.

Home prices will continue to be soft during 1989 due to the weak real estate market, benefiting homebuyers in terms of affordability. Once the market recovers, prices can be expected to rise, both as a result of the recovery and due to the trend toward purchasing larger homes with more amenities.

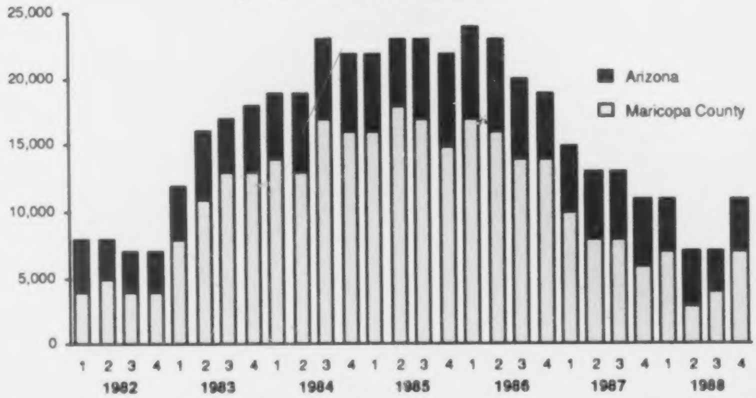
The median household income should continue to advance, although a national economic slowdown would slow local income growth as well. Affordability during 1989 may worsen from 1988's record level, though not significantly, and the spread between the new and resale indexes may continue to widen.

– **Sharla Klvett,** *Research Analyst*
Arizona Real Estate Center

Net Migration a Little Higher in Fourth Quarter

Net in-migration to the Phoenix area totaled 7,000 persons during fourth quarter 1988, returning to the 6,000 to 8,000 range experienced between second quarter 1987 and first quarter 1988 (see Figure I). Inflows during the second and third quarters of 1988 matched the weakest since the late 1960s. The fourth quarter's inflow remained well below the 11,000 average of the 1970s and 1980s.

FIGURE I
QUARTERLY NET IN-MIGRATION



Source: Center for Business Research, College of Business, Arizona State University

Net in-migration totaled 21,000 during 1988. Since the late 1960s, a smaller number occurred only in the recession years of 1975 and 1982. Total population change (net natural increase plus net in-migration) was 43,000, putting Maricopa County's population at 2,037,000 at the end of the year.

Statewide, the population was estimated to be 3,534,000 at year-end, up 73,000 during 1988. Net in-migration accounted for approximately one-half of the total change.

OUTLOOK

The improvement in net migration in the fourth quarter was somewhat larger than anticipated, but further improvement is unlikely in the near-term. Quarterly migration flows generally can be predicted within 2,000 to 3,000 persons from changes in employment that already have occurred (see the February issue for more detail).

TABLE 1
NET MIGRATION TO MARICOPA COUNTY

	Predicted Migration			Difference	
Quarter	*Three Qtrs. Ahead*	*One Qtr. Ahead*	Estimated Migration	*Three Qtrs. Ahead*	*One Qtr. Ahead*
First 1987	11	13	10	1	3
Second 1987	8	8	8	0	0
Third 1987	7	9	8	–1	1
Fourth 1987	6	7	6	0	1
First 1988	6	7	7	–1	0
Second 1988	7	6	3	4	3
Third 1988	8	6	4	4	2
Fourth 1988	8	6	7	1	–1
First 1989	7	7	—	—	—
Second 1989	8	—	—	—	—
Third 1989	10	—	—	—	—

Source: Center for Business Research, College of Business, Arizona State University.

Table 1 shows migration flows predicted from employment changes for 1987 into 1989. The prediction made three quarters ahead is based on construction employment and is not as accurate as that made one quarter ahead, which utilizes FIRE (finance, insurance, and real estate) employment as well. Declining employment in these sectors in 1988 made it unlikely that migration flows in the first half of 1989 will be different from those in 1988. The very low flows in mid-1988, however, probably will not be repeated. They resulted from a temporary increase in out-migration resulting from the large number of layoffs experienced in spring 1988. Stabilization of construction employment late in 1988 raises some hope that migration flows will improve later in 1989.

– Tom R. Rex
Research Manager

Average Wage in 1987 Rose Modestly

The average wage in rural Arizona fell further behind that in the state's urban areas in 1987. The percent change over the 1986 figure was only 2.9 percent in non-urban Arizona—considerably less than the 4.0 percent increase in Pima County and the 4.5 percent gain in Maricopa County. Arizona's increase of 4.2 percent was near the national average of 4.5 percent. An inflation rate of roughly 4 percent indicates that real gains in the average wage were minimal or negative.

The percent change in the average wage varied widely by rural county. Increases in La Paz, Santa Cruz, Cochise and Graham counties exceeded the Phoenix area figure. In contrast, counties with a large mining industry—Gila, Greenlee, Pinal—experienced minimal gains in their average wage.

Greenlee County's 1987 average wage of $24,205 easily was the highest in the state. Most jobs in the county are in the high-paying mining industry. Maricopa was the only other county to exceed the state's average wage of $19,326. Its figure of $20,320 was comparable to the national average.

– Tom R. Rex
Research Manager

Annual Average Inflation Rate for '88 Equals That of '87

The 1988 annual average increase in the Metropolitan Phoenix Consumer Price Index, 4.1 percent, was equivalent to the area's rate for 1987 and to the 1988 national average increase. For the past three years, Phoenix area inflation has tracked that of the nation. Inflation rates have remained below those of 1984-85, when the local economy was booming.

Several methods can be used to calculate the inflation rate from the CPI. In this article, the annual average percent change is used: the average of the four quarterly index values for a year, compared to the average of the previous year. The other widely used method is employed in the quarterly CPI reports (see *Arizona Business*, February 1989). It compares the index value at the end of the year to the value at the end of the previous year. Because the inflation rate accelerated during 1988, the annual average increase was less than the year-end inflation rate (5.0 percent).

CONSUMER PRICES IN 1988

Of the seven major categories of the CPI, three—food and beverages, housing, and medical care—experienced inflation rates comparable to that of the all-items average (see Table 1). A smaller gain in the transportation category offset larger increases in apparel and upkeep, entertainment and other goods and services.

Compared to 1987, inflation in 1988 was higher in the categories of food and beverages, housing and apparel and upkeep. But transportation inflation was much lower.

Inflation in the food and beverages category returned to the 4 percent range measured each year between 1982 and 1986, though food at home price increases accelerated to 5 percent, the highest since 1981. The greatest inflation on record in the fruits and vegetables category (21 percent) largely was responsible for the higher food costs.

Housing costs, which account for 42 percent of the entire index, rose 4 percent in 1988, up from the 2.2 percent gains measured in 1986 and 1987. While shelter cost increases remained modest, a reflection of an overbuilt market, fuel and other utilities and household furnishings and operations both experienced higher inflation in 1988.

Inflation in the transportation category continued to seesaw, rising 2.5 percent in 1988 following a 9 percent gain in 1987. Motor fuel prices declined by 8 percent after rising 10 percent the preceding year.

For the second consecutive year, medical care inflation was approximately 4 percent, roughly equal to the all-items rate. Hospital costs, however, resumed rapid increases, up 12.5 percent.

Apparel and upkeep costs rose by the most on record (8 percent), and

TABLE 1
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
Annual Average, Selected Items

Expenditure Category	*1988 Relative Importance*[1]	*1988 Index (1982-84 = 100)*	**Percent Change** *1988*	*1987*	*1986*
ALL ITEMS	100.0%	120.2	4.1	4.1	1.3
Food and Beverages	16.4	119.5	4.3	1.9	4.2
Food	14.8	118.4	3.7	1.8	4.0
Food at Home	8.5	120.4	5.2	2.5	4.1
Cereal and Bakery Products	1.1	133.8	7.0	4.4	5.8
Meats, Poultry, Fish, and Eggs	2.5	112.9	4.9	2.9	2.5
Dairy Products	1.2	112.4	1.6	2.8	2.7
Fruits and Vegetables	1.3	144.3	21.1	3.4	1.7
Other Food at Home	2.4	113.9	–0.9	0.4	6.8
Food Away from Home	6.3	116.4	2.1	0.3	3.8
Housing	42.4	115.8	3.9	2.2	2.2
Shelter	28.2	115.5	2.6	2.0	3.5
Renters' Costs	7.7	118.6	0.9	–0.4	2.8
Homeowners' Costs	20.4	118.1	3.1	3.2	3.8
Fuel and Other Utilities	6.8	118.1	7.5	3.7	–2.0
Gas (piped) and Electricity	3.9	114.5	6.7	4.6	–3.7
Household Furnishings/Operations	7.4	114.6	5.0	1.2	1.4
Apparel and Upkeep	5.8	119.9	8.3	1.8	1.5
Transportation	19.1	117.2	2.5	8.9	–5.6
Private Transportation	16.6	117.3	2.4	9.4	–5.7
New and Used Cars	7.2	129.8	6.2	6.9	–1.2
Motor Fuels	3.4	75.7	–8.2	9.5	–25.1
Public Transportation	2.5	112.1	4.0	3.0	–4.7
Medical Care	6.7	146.5	3.9	4.4	5.7
Entertainment	4.6	140.5	7.3	6.4	6.8
Other Goods and Services	5.0	132.6	5.7	5.9	4.6

[1] Expressed as a percent of all items. The relative importance of the seven major categories sums to 100.0 percent. Only selected detail items are shown; thus, the relative importance of these items will not sum to that of the major categories.

Source: Center for Business Research, College of Business, Arizona State University; in cosponsorship with Valley National Bank.

TABLE 2
CONSUMER PRICE INDEX
METROPOLITAN PHOENIX AND UNITED STATES
1988 Annual Average Percent Change

Expenditure Category	*Phoenix*	*United States*
ALL ITEMS	4.1	4.1
Food and Beverages	4.3	4.1
Housing	3.9	3.8
Apparel and Upkeep	8.3	4.3
Transportation	2.5	3.1
Medical Care	3.9	6.5
Entertainment	7.3	4.3
Other Goods and Services	5.7	6.6

Source: Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data are from the U.S. Department of Labor, Bureau of Labor Statistics.

entertainment costs and prices of other goods and services continued to rise at well above the all-items average rate.

COMPARISON AREAS

Overall inflation in the Phoenix area in 1988 was identical to the national average. Rates also were similar for the three most important categories—food and beverages, housing, and transportation (see Table 2). The Phoenix area experienced less inflation than the national average in the other goods and services and medical care categories, but more inflation in the entertainment and apparel and upkeep categories.

Compared to the Tucson area, Phoenix area inflation was higher. The inflation rate in Arizona's two urban areas was nearly identical through 1987 and first quarter 1988 (the annual average increase in 1987 was 4.1 percent in the Phoenix area and 4.4 percent in the Tucson area). In second quarter 1988, however, deflation was measured in the Tucson area at the same time that the Phoenix area experienced relatively high inflation. Thus, despite higher inflation rates in the third and fourth quarters, Tucson area annual average inflation was just 2.3 percent.

1988 FORECAST ACCURACY

At the beginning of 1988, nearly all forecasts of 1988 national inflation fell within a 4 to 5 percent range. The annual average of 4.1 percent almost matched the consensus forecast of 4.3 percent. For the Phoenix area, the consensus forecast of 4.5 percent was slightly high; the 4.1 percent actual value nearly matched the CBR's 4.2 percent forecast.

1989 OUTLOOK

The 1989 annual average increase in the national CPI is expected to be between 4.5 and 5 percent, a slight acceleration over 1988. The *Arizona Blue Chip* panel foresees an increase of about 5 percent for the Phoenix area. The Center for Business Research's forecast is similar—a 5.1 percent increase.

Phoenix area inflation began 1989 at a 5 percent annual rate. Because of a small increase in first quarter 1988, the year-over-year rate probably will accelerate in the first quarter to between 5.5 and 6 percent. After that, the year-over-year rate should drop back to slightly less than 5 percent by year end, assuming a fairly steady quarterly inflation rate of 1.0 to 1.5 percent throughout the year.

As the 1988 drought recedes in time, the inflation rate in food and beverages is likely to diminish during 1989, offsetting a probable acceleration in the medical care component.

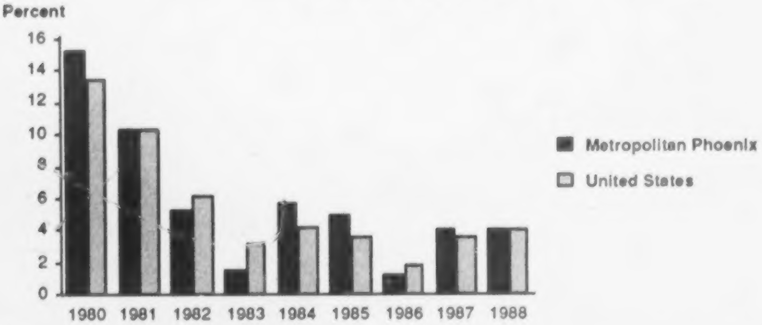
Housing inflation likely will remain moderate and steady. Even if some improvement in occupancy rates occurs as expected, apartment vacancies should remain a problem, holding renters' cost increases to near zero through 1989. Slow growth of the Valley's population and higher than normal vacancy rates should also hold homeowners' cost increases down.

Gasoline prices, and transportation costs in general, have been highly volatile for years, making their forecast difficult. Higher inflation than in 1988 seems likely and would be a primary cause of 1989's projected higher overall inflation rate.

Inflation in entertainment and other goods and services has outpaced the overall rate for years and is likely to do so again in 1989, even though rates in 1989 may match those in 1988. Inflation in clothing prices is unlikely to match 1988's high level.

– **Tom R. Rex**
Research Manager

FIGURE I
METROPOLITAN PHOENIX AND U.S. CONSUMER PRICE INDEXES
Annual Percent Changes



Source: Center for Business Research, College of Business, Arizona State University; in cosponsorship with Valley National Bank.

CPI Description Available

A description of the Consumer Price Index, available from the Center for Business Research, answers such common questions about the CPI as:

- **What is the difference between the CPI for all urban consumers (CPI-U) and the CPI for urban wage earners and clerical workers (CPI-W)?**
- **What is the relationship between the CPI and the inflation rate, and how is this rate calculated?**
- **Is the CPI a cost-of-living index?**
- **How is the CPI applied in contractual agreements?**

To obtain a copy of the CPI description, call (602) 965-3961.

Metro Phoenix CPI

The Metropolitan Phoenix Consumer Price Index (CPI), on which these inflation figures are based, is prepared by the Center for Business Research in the ASU College of Business. The Center conducts comprehensive pricing surveys each quarter, in cosponsorship with Valley National Bank.

Differences in Population Growth by Age Bracket Are Striking

Mostly due to variations in the national birth rate, the age distribution of both the national and Arizona population is undergoing substantial change. Relatively low birth rates during the depression years of the 1930s and war years of the early 1940s have led to a relatively small cohort of individuals currently aged between 45 and 60. The baby-boom that occurred from 1946 to 1964 led to a substantially larger group now aged between 25 and 43. Declining birth rates in the late 1960s and 1970s led to a smaller number of people now aged roughly 10 to 21 years old.

The heavy in-migration to Arizona will not have a substantial impact on these relative cohort sizes. Arizona's age distribution has not differed substantially from the national age distribution, and probably will not differ through the end of the century. Currently, Arizona has relatively fewer people aged 35 to 54 than the national average, relatively more children under 5 years old and slightly more people aged 65 to 74.

CHANGES BY AGE BRACKET

The number of pre-school age children rose at a slower rate than that of the overall population in the 1970s (see Table 1), and slightly faster in the 1980s (because the entire baby-boom generation was in child-bearing years), but should grow very little in the 1990s because the baby-bust generation will replace the baby-boom generation in the prime child-bearing years.

Growth of the school-age population lagged behind the overall population through the 1970s and 1980s, but should equal the total growth rate in the 1990s. The college-age population grew faster than the average in the 1970s, but hardly changed in the 1980s. Growth of this segment should be faster, but still below average, in the 1990s.

The number of young adults (25-34 age bracket) exploded in the 1970s with fast growth continuing into the 1980s. Their proportion of the population peaked around 1987. Despite the substantive net in-migration expected in Arizona in the 1990s, the number of young adults will *decline*.

Growth in the 35-44 age bracket was average in the 1970s, boomed in the 1980s as the baby boomers aged into this bracket, and should continue to surge through the mid-1990s. The progression in the 45-54 age bracket will occur 10 years later: slow growth in the 1970s, average in the 1980s and rapid in the 1990s.

Retirement-age migration to Arizona begins in the 55-64 age bracket. Though this group experienced fast growth in the 1970s, the decline in depression-era births slowed growth in the 1980s. It should accelerate to slightly above that of the overall population in the 1990s.

The rate of growth in the number of retirement-aged people (65 to 74) exceeded that of the overall population throughout the 1970s and 1980s. In the 1990s, however, this group will not expand as much as the overall population. Retirement-related migration to Arizona will not become much more numerous until after the end of the century.

The oldest age group—those 75 and older—should continue to increase in number at about twice the overall rate, as it has since 1970.

To the many public sector programs that serve particular age groups, population changes by age are crucial to determining future needs. Likewise, private sector firms whose business caters to people of certain ages need to be aware of these changes.

– **Tom R. Rex**
Research Manager

TABLE 1
ARIZONA AGE DISTRIBUTION

Age	1970	1980	1985	1990	1995	2000	1970-80	1980-90	1990-2000
	Population in Thousands						*Percent Change*		
Less than 5	159	214	271	299	305	320	35	40	7
5-17	474	578	604	690	815	894	22	19	30
18-24	223	369	371	376	385	442	65	2	18
25-34	217	444	557	628	627	617	105	41	–2
35-44	195	298	402	530	652	725	53	78	37
45-54	190	252	276	343	472	617	33	36	80
55-64	152	257	288	307	343	428	69	19	39
65-74	108	202	248	296	343	362	87	47	22
75 and older	54	105	144	186	238	306	94	77	65
TOTAL	1,775	2,718	3,161	3,655	4,180	4,710	53	34	29
	Percentages						*Change in Percentages*		
Less than 5	9.0	7.9	8.6	8.2	7.3	6.8	–1.1	0.3	–1.4
5-17	26.7	21.3	19.1	18.9	19.5	19.0	–5.4	–2.4	0.1
18-24	12.6	13.6	11.7	10.3	9.2	9.4	1.0	–3.3	–0.9
25-34	12.2	16.3	17.6	17.2	15.0	13.1	4.1	0.9	–4.1
35-44	11.0	11.0	12.7	14.5	15.6	15.4	0.0	3.5	0.9
45-54	10.7	9.3	8.7	9.4	11.3	13.1	–1.4	0.1	3.7
55-64	8.6	9.5	9.1	8.4	8.2	9.1	0.9	–1.1	0.7
65-74	6.1	7.4	7.8	8.1	8.2	7.7	1.3	0.7	–0.4
75 and older	3.0	3.9	4.6	5.1	5.7	6.5	0.9	1.2	1.4

Source: Historical data from U.S. Department of Commerce, Bureau of the Census. Population projections from Center for Business Research, College of Business, Arizona State University.

Coincident Indexes Rebound in November

The coincident economic index for each area of Arizona registered a solid advance in November, seemingly marking an end to the period of declining economic activity recorded between the spring and early fall. The strong growth in November should be regarded cautiously, however. It is unlikely to be soon repeated.

After five consecutive monthly declines, the coincident index for Maricopa County rose 0.7 percent to 147.0. Economic growth remained weaker in the Phoenix area than in the rest of the state; Maricopa's index was 0.9 percent below its May 1988 peak.

A 0.9 percent gain in Pima County's index in November placed it at 138.8, just 0.1 percentage point below its peak. Likewise, the index for rural Arizona was 0.1 percentage point less than its highest value, advancing 1.6 percent in November to 131.2. The composite statewide measure rose 0.9 percent to 142.9.

The impetus for the large gains came particularly from a statewide improvement in the unemployment rate, following four months of worsening conditions. Commercial building permit valuations also rose statewide, though by less in Maricopa County than elsewhere. The construction advances probably were nothing more than a continuation of the pattern of large monthly fluctuations common in the last couple of years.

Employment fell slightly in the metropolitan areas, but rose in non-urban Arizona. The number of people working remained less than the number recorded in early 1988, especially in Maricopa County. Retail sales were flat throughout the state in November.

A preliminary look at December's employment and unemployment data suggests that the economy throughout the state expanded, but at a slower rate than in November. Revisions to these series for all of 1988 will be included in the next monthly report.

ALTERNATE CALCULATION

From spring into fall 1988, the coincident indexes measured considerable weakness in the Arizona economy. As seen in Table 1, each area experienced several months of declining economic activity. Annual growth rates started the year in excess of 5 percent, but had fallen to near 1 percent by October.

Further, each area experienced successive monthly declines totaling at least 1 percent. Only rarely in Pima County and non-urban Arizona—and never before in Maricopa County—had such a decline not indicated the end of an expansionary period. Yet, as the November indexes attest, a recession was not close at hand.

Rising unemployment rates contributed considerably to the slow and negative growth recorded in 1988. At times, however, especially during the current economic cycle, the unemployment rate measures more than economic activity; it also measures the mismatch of in-migration to job availability. Thus, the Center for Business Research recently explored whether the unemployment rate's weight in the coincident indexes was too high.

Alternate series were constructed, lowering the importance of the unemployment rate. The results were inconclusive; the alternate measure fit the Gross County Product series only slightly more accurately, particularly in Maricopa County since 1984. A comparison is shown in Table 2. In the alternate series, monthly growth rates were lower in 1987 and early 1988. Annual growth rates were less throughout 1988, but both series agree that growth nearly disappeared by October.

– Tom R. Rex
Research Manager

TABLE 1
PERCENT CHANGE IN COINCIDENT INDEXES

	Monthly			Annual		
1988	*Maricopa*	*Pima*	*Non-urban*	*Maricopa*	*Pima*	*Non-urban*
January	1.1%	.7%	1.5%	5.6%	5.7%	5.7%
February	.5	.8	–.5	5.8	5.7	4.5
March	.8	.3	.6	6.0	4.9	5.2
April	.1	–.8	–.9	5.5	4.3	4.4
May	.2	–.6	–.5	5.2	3.3	3.6
June	–.2	.5	–.0	4.3	2.6	4.4
July	–.2	–.4	–1.2	3.1	2.4	2.8
August	–.0	.1	.3	2.7	2.5	2.5
September	–.9	.2	.1	1.6	2.2	1.5
October	–.3	.2	.6	0.7	1.7	1.3
November	.7	.9	1.6	2.1	1.6	2.4

TABLE 2
PERCENT CHANGE IN MARICOPA COUNTY COINCIDENT INDEX

	Monthly		Annual	
1988	*Official*	*Alternate*	*Official*	*Alternate*
January	1.1%	.7%	5.6%	4.1%
February	.5	.4	5.8	4.5
March	.8	.7	6.0	4.6
April	.1	–.1	5.5	3.9
May	.2	.2	5.2	3.8
June	–.2	–.4	4.3	2.8
July	–.2	.1	3.1	1.8
August	–.0	.3	2.7	1.8
September	–.9	–1.0	1.6	0.9
October	–.3	–.2	0.7	0.3
November	.7	.3	2.1	1.2

Source (Tables 1 and 2): Center for Business Research, College of Business, Arizona State University.

GSP Growth Slows Further in Third Quarter 1988

Annual growth in Arizona's Gross State Product slipped to only 1.5 percent at the end of third quarter 1988, far below the 3.7 percent growth recorded in the Gross National Product. Growth of adjusted GSP, which excludes the volatile mining and agriculture industries, was even less at 1.3 percent.

Economic growth during the first half of 1988 was revised down slightly, with lowered growth in the second quarter more than offsetting an improvement in the first quarter. Even with these revisions, seasonal problems remained, as seen in Table 1.

Unlike recent quarters, when the gross products of various industries, particularly construction and FIRE (finance, insurance and real estate), declined, all industries except agriculture recorded an increase in gross product in the third quarter.

TABLE 1
REAL ECONOMIC GROWTH

	Quarterly Percent Change			Annual Percent Change		
	GSP	*Adjusted GSP*	*GNP*	*GSP*	*Adjusted GSP*	*GNP*
1st Quarter 1987	–0.6	–1.6	1.1	1.1	1.3	1.5
2nd Quarter 1987	1.4	1.6	1.2	2.6	2.1	3.0
3rd Quarter 1987	0.9	1.1	1.1	2.5	2.8	3.9
4th Quarter 1987	0.9	1.9	1.5	2.6	3.0	5.0
1st Quarter 1988	–1.1	–1.7	0.8	2.1	2.9	4.8
2nd Quarter 1988	1.0	0.3	0.7	1.8	1.6	4.2
3rd Quarter 1988	0.7	0.8	0.6	1.5	1.3	3.7

Notes: Annual percent change compares gross product in a given quarter to that of the same quarter of the prior year. All GSP data since fourth quarter 1987 were revised.

Source: **Gross State Product (GSP) and adjusted GSP (minus the contributions of the agriculture and mining industries) from Center for Business Research, College of Business, Arizona State University. Gross National Product (GNP) from U.S. Department of Commerce, Bureau of Economic Analysis.**

The gross products of several industries, including services, trade, manufacturing and TCPU (transportation, communications and public utilities), expanded from 3 to 5 percent between third quarter 1987 and third quarter 1988. Declines of about 4 percent, however, were recorded for both construction and FIRE.

Annual GSP growth through third quarter 1988 was about equal to the percent increase in employment, which ranked 40th among the 50 states. Likewise, Arizona ranked 40th on personal income growth through third quarter 1988: 6.6 percent (not inflation-adjusted).

After 2.2 percent growth in 1987, Arizona's gross product appears to have expanded less than 2 percent in 1988, about equal to the annual average increase in employment. The gain in the coincident index also was similar. GSP growth probably will accelerate in 1989, but only to between 2 and 3 percent.

– Tom R. Rex
Research Manager

January Purchasing Indicators Reflect Sluggish Economy

The Arizona economy marked time in January, for the third month in a row. New orders received, production, and inventory levels of purchased materials all were unchanged from the previous month. Employment fell again, for the third consecutive month, while prices paid for purchased items escalated sharply, flashing an early warning of higher inflation down the road.

As the economy uses a higher percentage of available resources, upward price pressures will intensify. Until new orders gain back some of their previous strength, it is unlikely that any resumption of overall economic growth will occur. The employment picture probably will deteriorate even further before any robust growth begins.

– Harold Fearon

TABLE 1
JANUARY PURCHASING SURVEY

Key Indicators	Percent of Purchasing Managers Indicating Each Response (January compared to December) *Higher*	*Same*	*Lower*
Prices paid for major commodities	55	42	3
Delivery time from vendors	28	64	8
Purchased materials inventory level	28	45	27
New orders received	32	38	30
Production	28	45	27
Employment	15	66	19
Purchases	38	34	28

Source: **Purchasing Management Association of Arizona, Purchasing Management Association of Southern Arizona, and the Northern Arizona Group.**

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Leading Index Declined in December

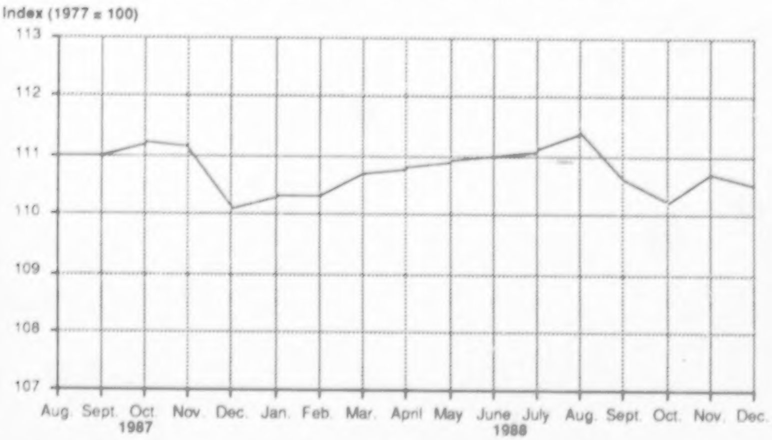
The Arizona index of Leading Economic Indicators dropped in December to 110.5—a figure 0.4 percent above the 110.1 figure for December 1987 (1977 = 100).

Inventories, production, new orders, residential building permits, and employment had a negative impact. Sensitive prices, the money supply, and delivery times were positive influences. Manufacturing hours were neutral and unemployment insurance claims were unavailable.

ANALYSIS

The construction industry is a very important part of the Arizona economy. The leading index tracks construction activity through the seasonally adjusted real dollar value of residential building permits in Maricopa County. Maricopa County data are used, because they are often available earlier and represent a majority of the activity for the state. The corresponding component in the national index is new private housing units started.

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution*			
	Sept.	*Oct.*	*Nov.*	*Dec.*
Delivery Time*	–.08	–.03	.01	.01
Inventory Levels*	–.06	.14	–.12	–.09
New Orders*	–.08	.06	–.03	–.06
Production*	.01	.02	–.01	–.08
Employment*	–.03	–.10	.01	–.02
Residential Building Permits	–.24	–.20	.38	–.06
Unemployment Insurance Claims	.00	.00	.00	.00
Average Workweek, Manufacturing	.00	–.07	.12	.00
Money Supply	–.11	–.13	.10	.04
Change in Sensitive Materials Prices	–.07	–.08	–.02	.07
OVERALL INDEX CHANGE (%)	–.67	–.40	.45	–.19

* The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

Using the dollar value of residential building permits instead of a measure like housing units started allows the Arizona leading index to capture the differences in economic impact between various types of housing units. The economic impact of building 300 single-family homes is likely to be significantly greater than the impact of building 300 apartment units.

Ideally, the change in the dollar value of residential building permits should be measured free from the distortion of inflation. In practice, the dollar value is adjusted using the consumer price index for all urban consumers. This price index satisfies the requirement for a broad-based index that is available monthly.

OUTLOOK

The index continues to move within a narrow range suggesting little change for the Arizona economy in the first half of 1989. The state's economy is benefiting from the continued strong performance of the national economy.

– **Tracy L. Clark,** *Economist*
Economic Outlook Center

The Arizona leading index is based on 10 economic indicators, combined and weighted to project the pace of economic activity several months ahead. Five of the components come from a monthly survey of Arizona purchasing managers conducted by Dr. Harold Fearon. The Arizona Index of Leading Economic Indicators is sponsored by Citibank (Arizona).

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date	
					Value	Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	3rd Qtr.	60.034	1.6	5.4	NA	NA
Arizona - 1982 Dollars	3rd Qtr.	48.002	0.7	1.5	NA	NA
COINCIDENT ECONOMIC INDEXES (1982 = 100)						
Arizona	Nov.	142.9	0.9	2.1	NA	NA
Metropolitan Phoenix	Nov.	147.0	0.8	2.1	NA	NA
Metropolitan Tucson	Nov.	138.8	0.9	1.6	NA	NA
Non-urban Arizona	Nov.	131.2	1.6	2.3	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	4th Qtr.	122.5	1.3	5.1	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Dec.	110.5	–0.2	0.4	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Nov.	224,279	–11	2	3,167,390	–13
Pima County	Nov.	43,317	49	0	436,334	–20
Balance of State	Nov.	54,896	19	47	635,264	2
Arizona	Nov.	322,492	–1	7	4,238,988	–11
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Nov.	1,187	–23	–24	20,292	–23
Pima County	Nov.	233	–33	18	4,869	–17
Balance of State	Nov.	1,112	57	18	9,241	–8
Arizona	Nov.	2,532	–3	–6	34,402	–19
HOME SALES						
Maricopa County - Number	Dec.	3,710	14	14	50,820	–14
Maricopa County - Median Price	Dec.	83,000	1.2	–0.3	80,675	0.8
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	4th Qtr.	91	–1.1	1.1	NA	NA
Metropolitan Phoenix - Resale Homes	4th Qtr.	123	3.4	3.4	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	Jan.	10.7	0.9	2.9	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	4th Qtr.	2,037	0.6	2.2	NA	NA
Arizona	4th Qtr.	3,534	0.8	2.2	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Nov.	3,528	–1.9	28.1	40,719	14.6
	Dec.	3,649	3.4	11.4	44,368	14.3

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University.

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Growth still slow in '89, improving in '90

Quarterly Economic Forecast

The persistent strength of the national economy through the final quarter of 1988 surprised a number of analysts. The expansion, which began in late 1982, continued alive and well as over-the-year growth in inflation-adjusted Gross National Product was a solid 3.8 percent. This was the highest rate of growth since the 6.8 percent gain recorded in 1984.

Meanwhile in Arizona, the economy in 1988 performed at a pace best described as sluggish. The state economy grew, but slowly. Inflation-adjusted gross state product during the year expanded at an estimated 1.3 percent, only a third of the national rate of output. While the national unemployment rate was falling, Arizona's unemployment rate crept upward, averaging 6.3 percent for the year.

Arizona job creation lagged the national pace as well. While national wage and salary employment grew 3.6 percent in 1988, Arizona's employment grew by 1.8 percent. Arizona finished the year ranked 42nd among all states in the rate of growth of nonagricultural wage and salary positions.

THE NATIONAL SCENE

Eight years ago at this time, Ronald Reagan pushed for personal income tax cuts in the wake of a significant election victory. As the fiscal plan evolved, the original call for expenditure reductions to accompany the tax cuts softened and then disappeared.

Instead, the "Laffer Curve" analysis was used to support the claim that economic growth resulting from the tax cuts would offset lost revenues and in fact, shrink the deficit.

The fiscal "free lunch" did not develop, of course. While national product grew by 78 percent between 1980 and 1988, federal debt nearly tripled. Now, President Bush must deal with problems at least partially growing out of policies he described in the 1980 campaign as "voodoo economics."

In a recent address to the Economic Club of Phoenix, Paul McCracken, former member of the Council of Economic Advisors, noted that high levels of borrowing by the Treasury together with private sector needs create a larger demand for funds than domestic savings can cover. The necessary continuing net inflow of savings from abroad is accompanied by a deficit in our balance of payments on current account.

Second, while the 4.6 percent growth in the consumer price index for 1988 was small by the standards of many nations, it was more than double the 2.1 percent average increase experienced during the first two-thirds of this century.

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McCracken stressed that a delayed reaction to the inflation threat by the Federal Reserve would have a more severe impact upon the economy. He also pointed out that tighter money would have the effect of slowing the growth of domestic demand, thus helping the trade balance.

THE NATIONAL OUTLOOK

With interest rates rising during the past six months, the resolve of the Federal Reserve to combat inflation seems evident. Therefore, the current national outlook produced by the Economic Outlook Center (EOC) is conditioned by a scenario of rising interest rates through at least the first half of the year.

The EOC outlook for growth in real output for this year is based on the assumption that the Federal Reserve will successfully slow inflation without throwing the economy into recession. Real output in 1989 is projected to grow by 2.4 percent in 1989 and by 2.0 in 1990 (Table 1). The forecast reflects immense faith in the ability of the Federal Reserve to provide a so-called "soft landing"— slower growth without recession.

One major risk to the forecast is if little progress is made in solving the deficit problem and foreigners move away from holding dollars, the resulting dollar depreciation would require the Fed to raise interest rates in order to lure foreign funds back into the country. The higher rates would set the stage for a recession in 1990.

Alternatively, the Federal Reserve may not be successful in cooling the economy this year. Strong demand for products may keep business investment growing and fur-

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ther tighten labor markets. Resulting inflationary pressures would require slamming on the monetary brakes, again introducing the possibility of a recession lasting two or three quarters.

Even with the favorable "soft landing" scenario, the winter of 1989–1990 is not likely to be a good period for the U.S. economy. Growth in industrial production will be slower, but exports will continue to improve. The unemployment rate is projected to move up slightly in 1990.

A weakening economy during the winter should bring slightly lower interest rates in 1990. The current national forecast calls for modest improvement in housing starts, to 1.5 million.

THE ARIZONA ECONOMY

The 1.8 percent gain in new jobs during 1988 was the weakest growth for Arizona since the recession year of 1982. In contrast, job growth during 1985 was a vigorous 8.2 percent, best in the nation and four times better than the year just completed. Two sectors, construction and FIRE, lost jobs during the year (Figure 1). Mining and services led in job gains.

Personal income figures for the 12 months ending in September of 1988 released by the U. S. Department of Commerce showed that income in Arizona was up 6.6 percent, one full percentage point

TABLE 1

1989 AND 1990 ECONOMIC FORECASTS: UNITED STATES

	Actual *1985*	Actual *1986*	Actual *1987*	Estimated *1988*	Forecast *1989*	Forecast *1990*
Gross National Product						
Billions of 1982 Dollars	3,618.7	3,721.7	3,847.0	3,995.1	4,091.0	4,173.0
Percent Change	3.4	2.8	3.4	3.8	2.4	2.0
Industrial Production (Percent Change)	1.9	1.1	3.8	5.7	3.0	1.5
Net Exports (Billions of 1982 Dollars)	–104.2	–137.5	–128.9	–99.7	–91.2	–70.5
Housing Starts						
Number in Millions	1.74	1.81	1.63	1.49	1.46	1.50
Percent Change	1.7	4.0	–9.9	–8.6	–2.0	2.7
Unemployment Rate (Percent)	7.2	7.0	6.2	5.5	5.4	5.7
Consumer Price Index (Percent Change)	3.5	1.9	3.6	4.1	4.6	4.7
Three-Month Treasury Bill Rate (Percent)	7.5	6.0	5.8	6.7	8.3	8.0
Aaa Corporate Bond Rate (Percent)	11.4	9.0	9.4	9.7	10.3	10.0

TABLE 2

1989 AND 1990 ECONOMIC FORECASTS: ARIZONA

	Actual *1985*	Actual *1986*	Actual *1987*	Estimated *1988*	Forecast *1989*	Forecast *1990*
Gross State Product						
Millions of 1982 Dollars	43,526	46,001	47,000	47,616	48,664	50,173
Percent Change	6.2	5.7	2.2	1.3	2.2	3.1
Personal Income						
Millions of Current Dollars	40,995	44,856	48,466	51,762	55,178	59,151
Percent Change	11.3	9.5	8.0	6.8	6.6	7.2
Retail Sales						
Millions of Current Dollars	16,169	17,187	18,001	18,855	19,741	20,807
Percent Change	8.9	6.3	4.7	4.7	4.7	5.4
Unemployment Rate (Percent)	6.5	6.9	6.3	6.3	6.8	6.5
Wage and Salary Employment						
Number in Thousands	1,278.6	1,338.3	1,385.8	1,410.6	1,437.4	1,473.0
Percent Change	8.2	4.6	3.6	1.8	1.9	2.5
Population						
Number in Thousands	3,203	3,328	3,428	3,507	3,584	3,670
Percent Change	4.0	3.9	3.0	2.3	2.2	2.4
Single-Family Units Permitted						
Number	33,271	34,079	27,360	22,791	19,828	22,743
Percent Change	7.8	2.4	–19.7	–16.7	–13.0	14.0
Multifamily Units Permitted*						
Number	37,312	27,008	12,038	8,853	7,233	7,841
Percent Change	–22.0	–27.2	–55.4	–26.5	–18.3	8.4

*Apartment complexes of three or more units

Source (Tables 1 and 2): Economic Outlook Center, College of Business, Arizona State University.

below the national increase of 7.6 percent. Typically, personal income in Arizona outpaces income growth nationally.

Two questions are on the minds of those who have a stake in the Arizona economy and its future. First, what is the explanation for the current low level of performance? And, secondly, what are the prospects for improvement?

Most analysts attribute the sluggishness in the economy primarily to overbuilding, particularly in multifamily and office structures. The loss of construction jobs and related weak activity in finance-insurance-real estate contributed to a slowdown affecting the entire economy.

After growth in job opportunities dipped in mid-1986, population inflows began to diminish. In turn, fewer in-migrants meant slower growth in demand for goods and services of all types in the local economy.

More broadly viewed, the current weakness is due to the absence of a "driver" for economic growth. While population growth in the 2.5 percent range is much better than the national growth rate of about 1 percent, it is not sufficient to boost job creation even up to the national average.

Further, there are no industries which are "hot" in Arizona at the present time. Nationally, manufacturing for export and capital goods production are the drivers of

TABLE 3

ARIZONA EMPLOYMENT FORECASTS
For 1989-1990 (thousands)

	1985	Percent Change	1986	Percent Change	1987	Percent Change	1988	Percent Change	1989	Percent Change	1990	Percent Change
Manufacturing	181.5	5.1	184.6	1.7	187.4	1.5	189.9	1.3	192.0	1.1	195.3	1.7
Mining	11.8	-9.2	11.0	-7.6	11.4	3.6	12.0	5.3	12.6	5.0	13.0	3.2
Construction	111.5	15.6	113.0	1.3	102.4	-9.4	93.9	-9.0	88.5	-5.8	88.9	0.5
TCPU*	62.9	5.2	65.8	4.6	71.8	9.3	72.7	1.4	73.9	1.7	75.2	1.8
Trade	311.4	8.7	326.3	4.8	340.4	4.3	347.5	2.1	355.8	2.4	364.6	2.5
FIRE**	81.0	12.3	86.7	7.0	92.1	6.2	93.3	-1.3	90.7	-2.8	91.0	0.3
Services	299.9	9.7	325.1	8.4	345.3	6.2	361.2	4.6	376.0	4.1	391.3	4.1
Government	218.0	5.1	224.1	2.8	231.9	3.5	240.3	3.6	248.0	3.2	253.7	2.3
Total Wage and Salary Employment	1,278.6	8.2	1,338.3	4.6	1,385.8	3.6	1,410.6	1.8	1,437.4	1.9	1,473.0	2.5
Total Employment	1,381.0	0.8	1,461.0	5.8	1,510.7	3.4	1,550.0	2.6	1,591.9	2.7	1,646.0	3.5
Total Unemployment	96.0	35.2	109	13.5	101	-7.3	104.0	3.0	109.9	5.7	113.5	3.3
Labor Force	1,477.0	2.5	1,569.6	6.3	1,612	2.7	1,654.0	2.6	1,700.3	2.8	1,753.0	3.1
Unemployment Rate		6.5		6.9		6.3		6.3		6.8		6.5

*Transportation, Communications and Public Utilities

**Finance, Insurance and Real Estate

Source: Economic Outlook Center, College of Business, Arizona State University.

TABLE 4

1989 AND 1990 ECONOMIC FORECASTS: MARICOPA COUNTY

	Actual *1985*	Actual *1986*	Actual *1987*	Estimated *1988*	Forecast *1989*	Forecast *1990*
Consumer Price Index						
Percent Change	5.0	1.3	4.1	4.0	4.8	5.1
Retail Sales						
Millions of Current Dollars	9,549	11,346	11,743	12,223	12,819	13,511
Percent Change	12.9	18.8	3.5	4.1	4.9	5.4
Unemployment Rate (Percent)	5.1	5.6	5.2	5.1	5.7	5.3
Wage and Salary Employment						
Number in Thousands	842.1	883.3	912.7	931.3	951.9	975.5
Percent Change	9.1	4.9	3.4	2.0	2.2	2.5
Population						
Number in Thousands	1,811	1,909	1,976	2,021	2,072	2,121
Percent Change	4.9	5.4	3.5	2.3	2.5	2.4
Single-Family Units Permitted						
Number	23,143	23,851	18,012	14,734	12,875	14,768
Percent Change	11.4	3.1	-24.5	-18.2	-12.6	14.7
Multifamily Units Permitted*						
Number	27,271	18,311	9,106	6,160	5,058	5,483
Percent Change	-25.9	-32.9	-50.3	-32.4	-17.9	8.4

*Apartment complexes of three or more units economic growth. These sectors are not particularly significant in Arizona. Construction, typically one of the most dynamic elements in the Arizona economic mix, has lost workers steadily since the summer of 1986.

Thanks to the strength in the national economy, tourism has been one of the few bright spots in the state. But January 1989 employment in the hotel and lodging sector was up only about 3 percent over the previous year. Last year at this time, jobs in this industry were up nearly 10 percent.

THE ARIZONA OUTLOOK

What are the prospects for improvement in the Arizona economy? The EOC Arizona outlook is based on the "soft landing" assumption for the national economy. That is, it is assumed there is to be no national recession within the next two years, but a period of slow national growth while higher interest rates take their toll in late 1989 or early 1990.

The forecast is also predicated on the view that the Arizona economy will bottom out very soon this year. Population growth, still affected by slowing job opportunities in 1988, dips in 1989 to 2.2 percent, then rises in 1990 to 2.4 percent. The population increase between 1989 and 1990 is about 86,000 persons (Table 2).

Job creation in 1989 is projected to be very similar to 1988, at 1.9 percent. The forecast calls for about 27,000 new nonagricultural jobs in 1989, and over 35,000 more in 1990. By 1990, job creation rises to 2.5 percent per year. This will be only half the long-term Arizona average for job growth, but approximately double the national rate of job creation, which will be less than 2 percent under the "soft landing" scenario. Growth in inflation-adjusted Gross State Product rises to 3.1 percent by 1990, up from 2.2 percent in 1988.

In summary, Arizona should show modest improvement in 1990, after a year in 1989 very similar to 1988. As the national economy slows in 1990, Arizona gross product growth should again better the nation's, but not dramatically so (Figure 2).

One of the key components of the economy, the construction sector, is projected to rebound in 1990. Permits for single-family and multifamily housing will increase slightly after falling further in 1989, when interest rates drift upward. However, the level of activity in 1990 will still be well below that of 1987.

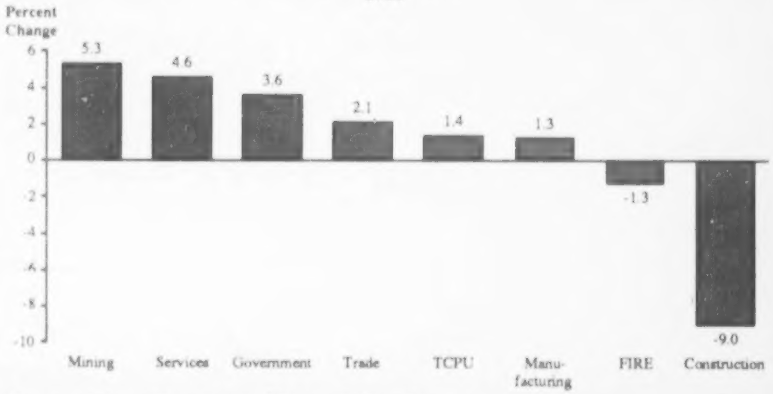
The unemployment rate will peak in 1989, averaging 6.8 percent for the year. Job losses will continue in construction and the finance-insurance-real estate sectors (Table 3) during 1989, but the industries will stabilize in 1990.

The EOC forecast for Maricopa County calls for the economy to grow slowly during 1989 and improve somewhat in 1990 (Table 4). The ongoing infrastructure improvements in freeways and the airport will make the Valley more competitive in the future. In addition, overbuilding has created plenty of office space and affordable housing for potential relocators during the next decade.

– Lee R. McPheters, *Director*
Economic Outlook Center

FIGURE I

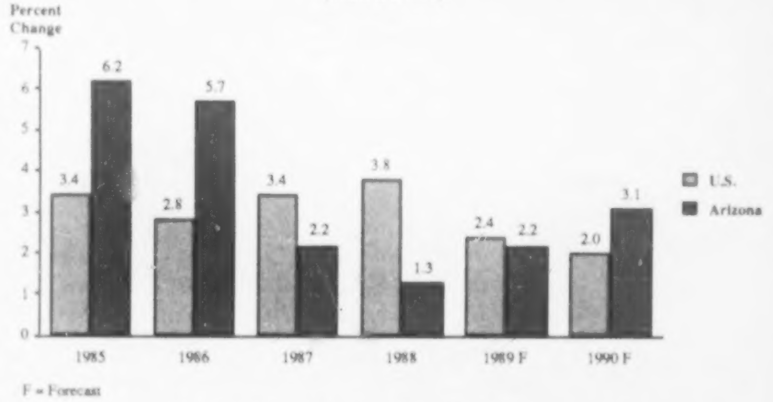
ARIZONA JOB GROWTH BY SECTOR
1988



Source: Arizona Department of Economic Security.

FIGURE II

U.S. AND ARIZONA GROWTH IN GROSS PRODUCT, 1985-1990
(1982 Dollars)



Source: Economic Outlook Center, College of Business, Arizona State University.

New Format

As you can see, we have revised the format of *Arizona Business*. One of the modifications is the shift to an 8 1/2" x 11" size. This change will reduce our printing costs and will make photocopying easier. Other format changes have been adopted to make our desktop publishing process more efficient and, we hope, the newsletter easier to read. All of us who contribute to the publishing of *Arizona Business* hope that you like our new look and that *Arizona Business* will continue to serve you as a valuable information resource.

– Timothy D. Hogan
Executive Editor

Arizona leading index declines again in January

The Arizona Index of Leading Economic Indicators decreased in January to 109.7. The January number was 0.5 percent below the 110.3 figure for January 1988 and 0.7 percent lower than the 110.5 number for December 1988 (1977 = 100).

Residential building permits, the money supply, production, new orders, delivery times, and employment had a negative impact. Inventories, sensitive prices, and manufacturing hours worked were positive influences. Unemployment insurance claims were unavailable.

ANALYSIS

The Arizona Leading Index contains two of the components used in the national index of leading indicators compiled by the Bureau of Economic Analysis, U.S. Department of Commerce: the money supply M2 and the change in sensitive materials prices. While recent changes by the Bureau of Economic Analysis have not altered the money supply figures beyond the normal revisions that occur each month, significant changes were made to the sensitive materials price data.

Price components that were no longer available were dropped and seasonal adjustment was made to those series showing seasonal variation. Since the weighting scheme used previously had little impact, the component series are now equally weighted. The smoothing method was changed from a simple four-month moving average to a technique developed by Statistics Canada. Although these changes to the sensitive materials price are substantial, their impact on the Arizona Index of Leading Economic Indicators has been small.

(For more information about the changes, see "Business Cycle Indicators: Revised Composite Indexes" by Marie P. Hertzberg and Harry A. Beckman, *Business Conditions Digest*, January 1989, published by the U.S. Department of Commerce, Bureau of Economic Analysis).

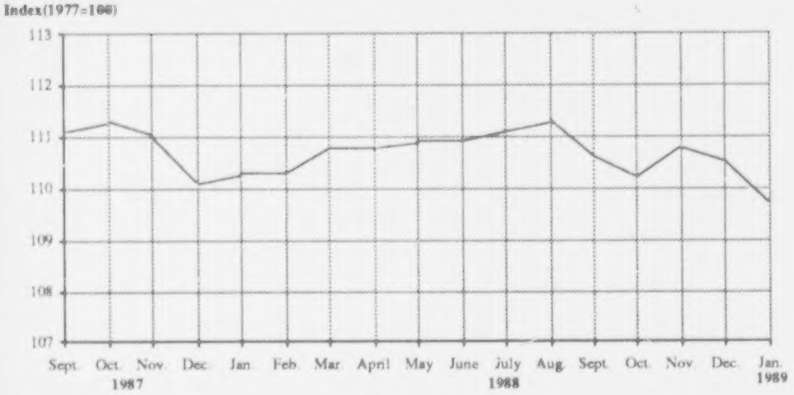
OUTLOOK

The fall in the index this month can be traced primarily to weak residential building permit numbers and a drop in the money supply. The money supply will fall further in the months ahead as the Federal Reserve battles inflation, while building permits will continue to show an erratic up-and-down pattern.

– **Tracy L. Clark**, *Economist*
Economic Outlook Center

FIGURE I

ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

TABLE 1

NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution'			
	Oct.	*Nov.*	*Dec.*	*Jan.*
Delivery Time*	–.03	.01	.01	–.02
Inventory Levels*	.14	–.12	–.09	.12
New Orders*	.06	–.03	–.06	–.03
Production*	.02	–.01	–.08	–.11
Employment*	–.10	.01	–.02	–.02
Residential Building Permits	–.20	.38	–.06	–.43
Unemployment Insurance Claims	.00	.00	.00	.00
Average Workweek, Manufacturing	–.07	.12	.00	.02
Money Supply	–.11	.15	.04	–.30
Change in Sensitive Materials Prices	–.04	.00	.02	.03
OVERALL INDEX CHANGE (%)	–.34	.50	–.24	–.73

' The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the Purchasing Management Associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

The Arizona leading index is based on 10 economic indicators, combined and weighted to project the pace of economic activity several months ahead. Five of the components come from a monthly survey of Arizona purchasing managers conducted by Dr. Harold Fearon. The Arizona Index of Leading Economic Indicators is sponsored by Citibank (Arizona).

1988 home sales, appreciation slip; affordability rises

Both home sales and home appreciation in the Metropolitan Phoenix area were lackluster during 1988, but affordability hit record-high levels.

Home sales declined in all of the larger cities, resulting in a 13 percent overall drop in sales during the year (see Table 1). Only Gilbert's sales were higher than in 1987. Paradise Valley, Sun City West and Fountain Hills suffered the largest losses, reversing their positions from 1987, when they were the only cities to sell more homes than in 1986. Phoenix accounted for 39 percent of the total sales in the Valley, followed in order by Mesa, Scottsdale, Chandler, Glendale and Tempe.

The median sales price of all homes sold in the Valley during 1988 rose 1 percent. The median price rose the most in Gilbert (7 percent) and Fountain Hills (4 percent), and fell in Paradise Valley (8 percent) and Sun City (7 percent). Paradise Valley's median price was considerably higher than any other city ($300,000), followed by Carefree/Cave Creek and Scottsdale. Prices were lowest in Sun City and Phoenix.

HOME APPRECIATION

The median rate of appreciation in all cities fell in 1988. The overall metro median dropped from 2.4 percent in 1987 to 1.8 percent in 1988, further increasing the spread between the local appreciation rate and the inflation rate of 4.1 percent. The appreciation decline reflects the weak resale housing market. Only Sun City West's appreciation rate of 7.2 percent was considerably higher than the metro median of 1.8 percent. This city was also the only one to outperform the Valley inflation rate, although its rate was down from 9.0 percent in 1987.

Tempe's appreciation rate was the most consistent, only 0.1 percent lower than in 1987. However, appreciation in Chandler, Scottsdale and Sun City West outperformed Tempe, and Mesa matched Tempe's 2.0 rate. Homes in Peoria also appreciated slightly faster than the Valley's overall 1.8 per- cent. The appreciation rate was below the metro median in Glendale, Phoenix and Sun City.

Areas with higher-priced homes and/or a larger proportion of new homes typically enjoy higher appreciation rates.

HOME AFFORDABILITY

Affordability of new single-family homes was highest in Mesa, the only city where a median-priced new home was affordable to the median-income household.

Resale home affordability was highest in Glendale and Phoenix; median-priced resale homes were also affordable to the median-income household in Tempe and Mesa (see Table 1).

BREAKDOWN BY CITY

Chandler/Gilbert

Relatively high appreciation, stable overall home prices and declining sales characterize the real estate market in Chandler. Home sales fell 19 percent during 1988; the biggest drop occurred in new townhouses and condominiums. Prices accelerated 6 percent on new single-family homes but fell 8 percent on new townhouses; the total median price rose 1 percent.

Gilbert was the only city to sell more homes in 1988 than in 1987; both new and resale single-family sales in Gilbert increased, and prices accelerated slightly over 1987. Once again, the effect of newer, more expensive homes is seen in the Gilbert market, primarily due to sales in planned area developments. Townhouse sales dropped 69 percent and the median price fell about 16 percent.

Both Chandler and Gilbert appeared to appreciate faster than the overall metro

TABLE 1

1988 HOME SALES, APPRECIATION AND AFFORDABILITY
Metropolitan Phoenix, By City

City	Number of Sales	Percent Change from 1987	Median Sales Price	Percent Change from 1987	Median Appreciation Rate	Resale Home Affordability Index[3]	New Home Affordability Index[2]
Carefree/Cave Creek	100	−9	143,520	2	*	NA	NA
Chandler	3,110	−19	88,030	1	2.6%	NA	NA
Fountain Hills	480	−23	99,000	4	*	NA	NA
Gilbert	280	8	99,000	7	*	NA	NA
Glendale	2,380	−18	75,000	−2	1.4	132	99
Mesa	7,790	−19	77,900	0	2.0	119	103
Paradise Valley	90	−76	300,000	−8	*	NA	NA
Peoria	1,750	−20	79,250	0	1.9	NA	NA
Phoenix	19,600	−14	72,600	−1	1.5	133	89
Scottsdale	4,190	−19	116,000	1	2.4	93	71
Sun City	1,330	−17	65,000	−7	0.8	NA	NA
Sun City West	880	−43	98,460	2	7.2	NA	NA
Tempe	2,370	−19	80,000	−1	2.0	122	72
MARICOPA CO. TOTAL[1]	49,770	−13	81,500	1	1.8	121	91

[1] Total does not add to sum of cities due to exclusion of cities with less than 100 sales and of unincorporated areas.

[2] An affordability index of 100 or more indicates that a median-income household could qualify for a median-priced home, assuming a conventional, fixed-rate, 30-year loan and a 15-percent downpayment.

* Insufficient number of sales.

NA = Income estimates not available.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

area, but Chandler's rate of 2.6 percent was still less than the inflation rate.

Glendale/Peoria

Glendale's most striking characteristic is its home affordability. The city's median sales price of both new and resale homes was lower than the Valley median, while its median income was 9 percent higher, resulting in high affordability levels.

Home sales fell 18 percent in Glendale while the median price of all homes sold fell 2 percent. The 1.4 percent rate of appreciation was lower only in Sun City. Low rates would be expected due to the low home prices in this area, as well as the low proportion of new homes.

Peoria is notable for its large percentage of new homes. Even though the proportion fell during 1988, it was second only to Sun City West. Sales in Peoria dropped 20 percent during the year while prices rose only 0.4 percent. Peoria's 1.9 percent rate of appreciation placed it only slightly above the metro median.

Mesa

High levels of new home affordability, stable prices, declining home sales and declining but slightly higher-than-average appreciation summarize real estate activity in Mesa. The total number of sales declined 19 percent, with new homes taking the largest loss. Prices were level overall, but new homes increased 3 percent.

Mesa's 2.0 percent rate of appreciation fell significantly from 3.1 percent during 1987, placing it mid-way among all Valley cities.

The city's new home affordability level was the highest in the Valley; Mesa was the only city in which the median income household could afford a new home. Resale affordability approximated the overall metro level.

Phoenix

High levels of resale home affordability, low appreciation rates and declining home sales highlight the Phoenix market.

The 1.5 percent rate of appreciation was third lowest among the Valley's large cities. Appreciation was lowest in the older and/or less expensive areas of Maryvale, Christown and Metrocenter. The areas of north central Phoenix, east Camelback, downtown and midtown Phoenix all had rates in excess of the Valley median, though no area of Phoenix kept up with the Valley inflation rate.

Affordability of resale single-family homes was much higher in Phoenix and Glendale than in any other large city in the Valley. The median income in Phoenix was slightly less than the overall Valley level, but home prices were significantly lower than in any other city.

Single-family home sales dropped 14 percent and townhomes declined 16 percent. The median price of single-family homes fell 1 percent while townhome prices dropped 4 percent.

Scottsdale, Paradise Valley, Fountain Hills

High home prices and appreciation rates as well as low levels of affordability and declining home sales summarize these expensive areas of the Valley.

Homes in all three of these areas appear to appreciate faster than in the metro area as a whole, primarily due to the large proportion of new and/or expensive homes. Scottsdale's appreciation rate of 2.4 percent in 1988 was higher; Fountain Hills and Paradise Valley appeared to have the second and third highest rates in the Valley, behind Sun City West. However, the small number of sales in Fountain Hills and Paradise Valley reduces confidence in the exact rate of increase.

Even though high-priced homes in exclusive neighborhoods are sometimes less affected by economic slowdowns than those in less expensive areas, the recent real estate slump had a definite impact on these three communities. The number of homes sold in 1988 plummeted 76 percent in Paradise Valley, 23 percent in Fountain Hills and 19 percent in Scottsdale.

The median price increased 4 percent in Fountain Hills and 1 percent in Scottsdale; the median price in Paradise Valley fell 8 percent, the largest decrease in the Valley. Paradise Valley's median home price of $300,000 was still more than two times higher than next-highest Carefree/Cave Creek.

Affordability of homes in Scottsdale is the lowest of all Valley cities for which income estimates can be obtained. The low level results from high home prices that more than offset the residents' higher incomes.

Sun City

Declining home sales, prices and appreciation describe the housing market in Sun City. The number of homes sold fell 17 percent from 1987; townhouse sales fell the most. The median home price dropped 7 percent, second only to Paradise Valley's 8 percent decline.

Exhibiting a significant downward trend, appreciation rates in Sun City have deteriorated from one of the highest in the Valley, 5.7 percent in 1984, to the lowest, 0.8 percent in 1988. The area has primarily lower-priced homes and few new homes, contributing to this low rate of appreciation.

Sun City West

Home sales declined dramatically in this area during 1988, while prices increased only slightly. Appreciation also declined, but remained well ahead of any other city in the Valley.

The 7.2 percent rate of appreciation in Sun City West was by far the highest in the Valley, considerably higher than the 1.8 percent overall median. The city had the highest proportion of homes appreciating 8 percent or more annually, and the smallest percentage of homes which lost value from one purchase to the next. Sun City West's claim to the highest proportion of new homes in the Valley, combined with the distinctive character of the area, explains most of the high appreciation rate.

Although home sales declined 43 percent from 1987 — the largest decline in the Valley — the major effect of the drop was to return the area to its approximate level prior to the 35 percent increase between 1986 and 1987.

Tempe

The number of homes sold dropped 19 percent in Tempe; single-family home sales declined more than townhome sales. Prices fell 1 percent, led mostly by townhouses. Appreciation declined less in Tempe than in any other city, improving the city's standing to slightly above the metro median.

Affordability of resale single-family homes in Tempe was approximately equal to the metro median, while new homes were less affordable. Tempe's median income, second only to Scottsdale's, was offset by high new-home prices, reducing affordability.

– **Sharla Kivett,** *Research Analyst*
Arizona Real Estate Center

Complete Reports Available

This article summarizes more detailed reports on the appreciation and affordability of homes in the Phoenix area during the 1980s. Copies of the complete reports, which include a number of tables with textual interpretation, as well as analysis by city and district, may be obtained for $5.00 each from the Arizona Real Estate Center, College of Business, Arizona State University, Tempe, AZ 85287; (602) 965-5440.

1988 construction slows for third consecutive year

From its record high in 1985 (108,897 permits worth $5.4 billion), the Arizona construction industry posted its third year of decreasing activity. Total construction activity for 1988 declined 10 percent from 1987 ($5.1 to $4.6 billion), and permit activity fell 15 percent (92,242 to 78, 522 permits). In the absence of a rapidly expanding economy, the primary driving forces were improved activity in certain non-metropolitan areas and large private and public projects in Maricopa County, confirmed by an increased average permit value of $58,500, up from $50,000 in 1985.

Maricopa County continued to dominate with $3.4 billion in new projects, 74 percent of the state's total dollar value. Total construction activity declined 11 percent from $3.8 billion (55,933 permits) in 1987 to $3.4 billion (44,574 permits) in 1988, and the average permit value increased from $61,340 in 1985 to $75,600.

Compared to 1987, Pima County's total construction activity declined 22 percent, from $596 million (13,921 permits) to $464 million (11,712 permits). Over the last few years, Pima County's share has steadily dropped from 15 percent in 1985 to only 10 percent for 1988.

In contrast, construction activity in the non-metropolitan areas increased from $662 million in 1987 (13 percent market share) to $720 million (16 percent market share). Growth was especially strong in Mohave County ($127 to $156 million) and Pinal County ($64 to $93 million).

The twelve leading areas of development activity for 1988, shown in Table 1, accounted for $3.8 billion or 83 percent of all activity recorded in Arizona. However, only Peoria ($146 to $202 million), Gilbert ($132 to $155 million), and unincorporated Yavapai County ($73 to $82 million) showed improvement over 1987.

TABLE 1

REPORTING UNITS WITH GREATEST TOTAL VALUE OF BUILDING PERMITS 1988

Reporting Unit	Value *(in millions)*
Phoenix	$1,320
Scottsdale	633
Mesa	313
Unincorporated Pima County	230
Unincorporated Maricopa County	221
Peoria	202
Tucson	195
Chandler	173
Tempe	173
Gilbert	155
Glendale	134
Unincorporated Yavapai County	82

Source: Center for Business Research, College of Business, Arizona State University.

SECTORAL ACTIVITY

Residential

Maricopa County. Although new home affordability remained stable throughout the year, single-family construction decreased 18 percent, from 18,012 permitted homes in 1987 to 14,734 new homes for 1988. The only areas to report improved new home construction activity over last year were Avondale (201 to 242 permits), Chandler (1,099 to 1,101 permits), and Gilbert (1,069 to 1,178 permits). While the number of permitted homes and recorded value has declined appreciably over the last few years, the average single-family permit value has steadily increased from $92,600 in 1987 to $98,600, demonstrating that the new home market continues to be dominated by the move-up market.

Rest of Arizona. The single-family sector in Pima County decreased 26 percent in 1988 (4,130 to 3,061 permits), while the average permit value improved from $66,700 to $69,600. Nearly 70 percent of permitted homes were in unincorporated Pima County. Oro Valley reported a strong increase in permitted activity, from 197 homes in 1987 to 363 homes for 1988.

Although new home construction declined in Arizona's non-metropolitan areas (5,218 to 4,996 permits), the decrease was not as severe as in the metropolitan areas. Further, total dollar value rose from $327 to $335 million, and the average permit value increased from $62,700 to $67,000. Areas reporting improvement included Lake Havasu City (565 to 763 permits), Bullhead City (203 to 251 permits), Prescott (286 to 313 permits), and unincorporated Yuma County (174 to 183 permits).

Commercial

Maricopa County. The multifamily and office building sectors declined appreciably in 1988, but the retail sector expanded from $249 million (735 permits) to $316 million (753 permits). Two cities recorded much stronger retail development in 1988: Phoenix ($91 to $154 million) and Tempe ($11 to $40 million).

With 6,030 permitted units, the multifamily sector has continued its rapid descent from its 1984 record year of 34,284 units. Three cities reported more activity than last year: Chandler (383 to 440 units), Gilbert (30 to 628 units), and Peoria (12 to 455 units). The annual average metropolitan vacancy rate has increased from 13 percent in 1987 to 15 percent.

After a record year in 1987 ($407 million), the office building sector decreased 42 percent in 1988 to $238 million. The primary areas of development were Phoenix ($161 million) and Scottsdale ($55 million). Development in the hotel/motel sector, declining in response to limited market demand, saw only 900 rooms permitted in 1988, valued at $31 million, compared to 2,900 rooms worth $88 million permitted in 1987. The city of Phoenix dominated this sector with 600 permitted rooms worth at $21 million.

Rest of Arizona. Multifamily activity in Pima County increased in 1988 from 1,556 to 1,882 authorized units. Oro Valley, which did not issue any multifamily permits for 1987, authorized 240 units for 1988. Both the office building and retail sectors declined over 50 percent from last year (see Table 2). No new hotel/motel developments were recorded during the year.

When development activity declines in the metropolitan areas, it frequently improves in the non-metropolitan areas. This improvement was especially evident in the retail sector, which grew from $36 million in 1987 to $60 million. The leading areas were Casa Grande (12 permits, $14 million), Cottonwood (6 permits, $6 million), and Yuma (17 permits, $6 million). While multifamily activity fell from 1,103 to 648 permitted units in the non-metropolitan area, several smaller cities recorded improvement over last year: Lake Havasu City (46 to 126 units), Bullhead City (0 to 88 units), Apache Junction (48 to 112 units), and Prescott (112 to 191 units). Bullhead City was the site of the largest permitted hotel/motel project with 150 rooms, worth $5 million. Development activity in the office building sector increased from $11 to $16 million, led by Flagstaff (7 permits, $4 million) and Prescott (12 permits, $2 million).

Industrial

Maricopa County. Industrial development continued to slide in 1988, with only $56 million in new projects compared to $127 million during 1987. Only the city of Tempe reported increased industrial activity, moving from $13.2 to $13.5 million. Other cities reported strong declines, including Chandler ($26 to $9 million), Mesa ($14 to $1 million), and Goodyear ($8 million to no activity).

Rest of Arizona. Industrial development in Pima County improved from $5 to $8 million; much of it in Tucson ($1 to $3 million). In the non-metropolitan counties, industrial activity increased from $10 to $23 million, and was most evident in Casa Grande (5 permits, $4 million), unincorporated Yavapai County (4 permits, $8 million), and Yuma (4 permits, $3 million).

Other

This category, which covers a wide range of permitted activity, from churches to schools to swimming pools, was the only one to increase over last year ($952 million to $1 billion), led by continued growth in educational facilities ($168 to $175 million) and a $100 million permit for a new Sky Harbor terminal in Phoenix.

New educational projects were permitted in Flagstaff (2 permits, $25 million), Show Low (1 permit, $4 million), and Peoria (4 permits, $15 million). New health care facility projects rose from $70 to $79 million, led by Peoria (6 permits, $42 million) and Scottsdale (1 permit, $12 million).

LOOKING AHEAD

Last year began clouded by concern about the effects of the stock market "crash," Arizona's slowing economy, lower population growth, and heightening inflation. Growth continued in spite of these dire expectations, but it was insufficient to stimulate construction to higher levels of activity. Given the strong development activity in recent years and the resulting overbuilt conditions in many sectors of the market, the economy must expand at a much greater rate if it is to stimulate new activity and allow for the absorption of existing space.

The major concern for 1989 is inflation and the corresponding rise in interest rates. As the Federal Reserve Board forces interest rates to increase, the national economy could enter a recession, adversely affecting the Arizona economy. Since real estate development is based on confidence in the future, any factor that dampens expectations can reduce development activity. Hence, 1989 will likely be a year-in-waiting as developers observe the changes in the economy and the market.

Other factors will also affect the construction industry. First, the strong migration pattern that fueled the record activity of the mid-80s has continued to diminish during the past year. Although Arizona is still growing, the pace is not sufficient to both support new development and fill existing space. Second, the activity in 1988 was largely supported by the construction of major private and public projects. Although several major projects have been announced for 1989, there is no certainty that they will be started. Further, they may not be sufficient to support construction activity at the 1988 levels.

No single sector appears to have the basic conditions needed to become a growing area during 1989. Development is most likely to increase in the non-metropolitan areas, especially Mohave and Yavapai counties. These areas have growing economies, based on tourism and retirees, and offer development opportunities, especially in housing.

Development activity is very closely related to the current and expected strength and direction of the economy. While the market is not expected to expand during 1989, neither is there any reason for construction activity to decline appreciably. No single sector should dominate in 1989, but combined, they should produce a solid although not spectacular year of construction activity. If the economy and population continue to grow at current levels and there is no recession, development activity should show signs of improvement during the last part of 1989, with stronger growth during 1990. However, if the economy declines further than currently expected, the market will follow suit, and the recovery will be postponed.

If short-term expectations lack confidence, the long-term outlook suggests great potential. As Arizona's economy continues to generate new jobs and income and attract new population, the state construction market will again be one of the most dynamic in the country in the 1990s.

– Jay Q. Butler

Dr. Butler is Associate Professor of Real Estate and Director of the Arizona Real Estate Center in the ASU College of Business.

TABLE 2

KEY SECTOR CONSTRUCTION ACTIVITY
1987 and 1988

			COMMERCIAL							
	SINGLE FAMILY		APARTMENTS[a]		OFFICE BUILDINGS[b]		RETAIL STORES[c]		INDUSTRIAL	
Maricopa County	*Number of Permits*	*Dollar Value (000)*	*Number of Units*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*
1988	14,734	1,453,391	6,030	288,323	228	238,453	753	316,045	140	56,269
1987	18,012	1,667,829	8,879	389,198	336	407,206	735	248,869	205	127,345
Pima County										
1988	3,061	213,142	1,882	57,536	82	15,886	89	19,686	34	7,968
1987	4,130	275,487	1,556	38,119	56	30,767	92	45,007	29	4,769
Rest of Arizona										
1988	4,996	335,069	648	18,548	109	16,485	260	60,387	66	22,956
1987	5,218	327,251	1,103	28,726	98	11,140	230	36,271	67	10,399
Arizona Total										
1988	22,791	2,001,602	8,560	364,407	419	270,824	1,102	396,118	240	87,193
1987	27,360	2,270,567	11,538	456,043	490	449,113	1,057	330,147	301	142,513

[a] Five or more housing units
[b] Office, bank, medical and professional buildings
[c] Shopping centers and other mercantile buildings

Source: Center for Business Research, College of Business, Arizona State University.

TABLE 3

ARIZONA BUILDING PERMITS: ANNUAL REPORT
January – December 1988

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*
APACHE COUNTY										
Eager**	62	1,436	3	47	0	0	6	2,665	71	4,148
St. Johns**	1	N/C	1	N/C	0	0	0	0	2	N/C
Springerville**	7	146	3	163	0	0	0	0	10	309
Unincorporated	132	3,349	5	258	0	0	20	3,875	157	7,482
Total, Apache County	202	4,931	12	468	0	0	26	6,540	240	11,939
Percent Change, Previous Year	-11	-27	20	-44	—	—	44	1,727	-8	48
COCHISE COUNTY										
Benson**	18	33	1	31	0	0	4	10	23	74
Bisbee	57	291	7	113	0	0	20	142	84	546
Douglas**	41	668	10	153	0	0	20	24	71	845
Huachuca City**	3	7	0	0	0	0	0	0	3	7
Sierra Vista	318	3,707	7	1,481	0	0	513	1,259	838	6,447
Tombstone**	5	166	0	0	0	0	9	7	14	173
Unincorporated**	222	9,994	13	4,177	0	0	17	111	252	14,282
Willcox**	48	89	9	784	0	0	34	352	91	1,225
Total, Cochise County	712	14,955	47	6,739	0	0	617	1,905	1,376	23,599
Percent Change, Previous Year	-50	-53	-44	31	—	—	-25	-42	-41	-42
COCONINO COUNTY										
Flagstaff**	495	23,224	69	12,325	4	840	254	36,759	822	73,148
Fredonia**	1	25	1	2	0	0	0	0	2	27
Page**	69	1,898	8	429	1	33	42	4,590	120	6,950
Unincorporated	993	34,672	60	2,027	1	57	239	1,924	1,293	38,680
Williams	30	721	8	185	1	18	27	357	66	1,281
Total, Coconino County	1,588	60,540	146	14,968	7	948	562	43,630	2,303	120,086
Percent Change, Previous Year	-7	0	-30	-41	-13	-42	-4	205	-9	18
GILA COUNTY										
Globe	27	436	10	1,545	0	0	35	142	72	2,123
Hayden	4	6	1	5	0	0	5	4	10	15
Miami**	6	42	0	0	0	0	3	6	9	48
Payson	394	10,005	23	1,255	2	157	53	713	472	12,130
Unincorporated	445	10,857	19	488	0	0	51	2,775	515	14,120
Total, Gila County	876	21,346	53	3,293	2	157	147	3,640	1,078	28,436
Percent Change, Previous Year	-1	-1	-30	-24	-33	94	-21	-22	-6	-7
GRAHAM COUNTY										
Pima**	35	315	2	81	0	0	15	21	52	417
Safford	129	1,739	16	257	0	0	30	404	175	2,400
Thatcher	57	1,220	3	221	0	0	17	1,543	77	2,984
Unincorporated	248	4,304	2	28	0	0	17	164	267	4,496
Total, Graham County	469	7,578	23	587	0	0	79	2,132	571	10,297
Percent Change, Previous Year	2	9	-48	-90	—	—	1	168	-2	-26
GREENLEE COUNTY										
Clifton**	0	0	0	0	0	0	0	0	0	0
Duncan**	1	70	0	0	0	0	0	0	1	70
Unincorporated	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Total, Greenlee County	1	70	0	0	0	0	0	0	1	70
Percent Change, Previous Year	0	—	—	—	—	—	—	—	0	—
LA PAZ COUNTY										
Parker**	31	158	3	31	0	0	13	59	47	248
Unincorporated**	384	4,873	25	3,531	0	0	165	1,089	574	9,493
Total, La Paz County	415	5,031	28	3,562	0	0	178	1,148	621	9,741
Percent Change, Previous Year	18	60	-7	51	—	—	75	268	27	50
MARICOPA COUNTY										
Avondale	328	15,048	6	323	1	12	229	9,435	564	24,818
Buckeye	24	108	5	1,053	0	0	6	389	35	1,550
Cave Creek**	9	N/C	1	N/C	0	0	5	N/C	15	N/C
Chandler	1,515	97,062	96	37,867	30	8,875	2,292	29,560	3,933	173,364
El Mirage**	26	473	2	421	0	0	28	3,084	56	3,978
Gila Bend	14	83	5	177	0	0	19	942	38	1,202
Gilbert	1,326	98,912	52	33,703	1	350	797	22,143	2,176	155,108
Glendale	1,390	77,357	191	39,324	3	1,092	744	15,811	2,328	133,584
Goodyear**	91	4,609	17	2,153	2	62	24	2,902	134	9,726
Guadalupe**	0	0	0	0	0	0	0	0	0	0
Mesa	2,333	164,877	93	49,089	5	830	2,859	98,052	5,290	312,848
Paradise Valley**	259	28,611	3	5,529	0	0	246	4,240	508	38,380
Peoria	1,642	97,308	73	40,596	0	0	508	63,991	2,223	201,895
Phoenix	7,387	456,366	597	458,902	70	30,114	7,145	375,040	15,199	1,320,422
Scottsdale	1,465	289,990	266	235,481	0	0	1,546	107,083	3,277	632,554
Surprise	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Tempe	809	52,025	439	63,667	25	13,582	777	43,796	2,050	173,070
Tolleson**	20	264	2	39	0	0	14	1,113	36	1,416
Unincorporated	4,316	150,559	380	43,864	2	632	1,876	25,762	6,574	220,817
Wickenburg	26	692	7	1,531	1	720	5	475	39	3,418
Youngtown**	24	119	0	0	0	0	75	5,416	99	5,535
Total, Maricopa County	23,004	1,534,463	2,235	1,013,719	140	56,269	19,195	809,234	44,574	3,413,685
Percent Change, Previous Year	-19	-13	-17	-21	-32	-56	-22	18	-20	-11

ARIZONA BUILDING PERMITS: ANNUAL REPORT (continued)

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*
MOHAVE COUNTY										
Kingman City	191	7,216	38	5,298	1	3	73	1,783	303	14,300
Kingman Area	448	6,851	12	850	1	72	288	787	749	8,560
Lake Havasu City	1,011	54,395	34	8,641	2	52	224	3,226	1,271	66,314
Lake Havasu Area	75	1,049	1	117	0	0	45	190	121	1,356
Bullhead City	804	22,995	30	9,739	0	0	49	1,318	883	34,052
Mohave Valley South	727	15,079	19	1,364	0	0	396	2,194	1,142	18,637
Dolan Springs	149	2,345	2	92	0	0	94	312	245	2,749
Sacramento Valley	370	5,765	17	565	0	0	176	800	563	7,130
Mohave General	291	2,095	8	598	0	0	50	297	349	2,990
Total, Mohave County	4,066	117,790	161	27,264	4	127	1,395	10,907	5,626	156,088
Percent Change, Previous Year	9	26	11	60	-75	-97	5	-14	8	23
NAVAJO COUNTY										
Holbrook	51	736	6	36	0	0	8	9	65	781
Pinetop-Lakeside**	86	3,012	4	184	0	0	20	72	110	3,268
Show Low**	89	1,857	17	2,842	1	139	124	3,652	231	8,490
Snowflake**	31	700	2	66	0	0	11	8	44	774
Taylor**	5	N/C	0	0	1	N/C	1	N/C	7	N/C
Unincorporated	725	17,409	16	1,582	1	378	12	232	754	19,601
Winslow**	50	552	8	2,073	1	320	17	318	76	3,263
Total, Navajo County	1,037	24,266	53	6,783	4	837	193	4,291	1,287	36,177
Percent Change, Previous Year	29	-2	36	117	300	4,550	66	427	34	26
PIMA COUNTY										
Marana	65	588	6	710	1	86	27	126	99	1,510
Oro Valley	381	25,647	22	9,056	1	400	184	2,198	588	37,301
South Tucson	38	221	6	89	2	129	12	40	58	479
Tucson	2,202	50,768	182	80,625	20	2,811	2,859	60,731	5,263	194,935
Unincorporated	3,511	157,648	115	25,782	10	4,542	2,068	42,029	5,704	230,001
Total, Pima County	6,197	234,872	331	116,262	34	7,968	5,150	105,124	11,712	464,226
Percent Change, Previous Year	-13	-21	-6	-12	17	67	-20	-36	-16	-22
PINAL COUNTY										
Apache Junction	443	10,826	53	5,245	0	0	466	2,946	962	19,017
Casa Grande	383	9,199	144	19,212	5	4,264	187	2,723	719	35,398
Coolidge**	46	511	2	6	0	0	11	196	59	713
Eloy	112	678	10	2,626	4	185	38	626	164	4,115
Florence**	117	933	1	12	0	0	23	587	141	1,532
Kearny**	16	33	1	5	0	0	4	21	21	59
Mammoth	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Superior	7	17	1	125	0	0	18	38	26	180
Unincorporated**	408	18,661	34	7,544	16	2,190	68	3,347	526	31,742
Total, Pinal County	1,532	40,858	246	34,775	25	6,639	815	10,484	2,618	92,756
Percent Change, Previous Year	27	23	58	92	257	432	22	-13	29	44
SANTA CRUZ COUNTY										
Nogales	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Unincorporated	418	10,547	17	1,056	2	455	24	762	461	12,820
Total, Santa Cruz County	418	10,547	17	1,056	2	455	24	762	461	12,820
Percent Change, Previous Year	-34	-23	6	5	0	107	-41	63	-34	-17
YAVAPAI COUNTY										
Chino Valley**	121	1,854	5	51	0	0	43	923	169	2,828
Clarkdale**	59	2,575	4	83	0	0	9	440	72	3,098
Cottonwood**	113	2,034	16	7,002	7	517	78	3,162	214	12,715
Jerome**	15	14	10	320	1	N/C	0	0	26	334
Prescott	621	26,279	38	10,959	1	59	398	2,493	1,058	39,790
Prescott Valley**	617	11,449	29	2,052	0	0	2	1,704	648	15,205
Unincorporated	1,330	58,913	44	6,229	4	7,526	297	9,812	1,675	82,480
Total, Yavapai County	2,876	103,118	146	26,696	13	8,107	827	18,534	3,862	156,450
Percent Change, Previous Year	-1	2	-6	30	44	855	-17	-39	5	3
YUMA COUNTY										
Somerton	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Unincorporated	912	22,882	58	3,520	5	2,218	605	3,126	1,580	31,746
Wellton	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Yuma**	296	10,740	30	8,946	4	3,473	282	7,144	612	30,303
Total, Yuma County	1,208	33,622	88	12,466	9	5,691	887	10,270	2,192	62,049
Percent Change, Previous Year	1	1	-18	-21	-18	461	15	-54	5	-14
TOTAL, ARIZONA	44,601	2,213,987	3,586	1,268,638	240	87,193	30,095	1,028,601	78,522	4,598,419
Percent Change, Previous Year	-13	-11	-13	-17	-20	39	-18	8	-15	-10

*Includes mobile homes.

**Incomplete data: One or more months not available.

N/R: No report.

N/C: This community does not collect dollar valuations.

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University.

TABLE 4

ARIZONA HOUSING UNITS AUTHORIZED: ANNUAL REPORT
January - December 1988

	One Family	Mobile Homes	Duplex	3-4 Family	5 or More	Total
APACHE COUNTY						
Eager**	14	19	0	0	0	33
St. Johns**	0	1	0	0	0	1
Springerville**	2	2	0	0	0	4
Unincorporated	60	26	0	0	0	86
Total, Apache County	76	48	0	0	0	124
Percent Change, Previous Year	-5	-48	—	—	—	-28
COCHISE COUNTY						
Benson**	0	10	0	0	0	10
Bisbee	1	1	0	0	0	2
Douglas**	10	0	0	0	0	10
Huachuca City**	0	0	0	0	0	0
Sierra Vista	60	36	0	0	0	96
Tombstone**	2	0	0	0	0	2
Unincorporated**	184	0	0	0	0	184
Willcox**	1	18	0	0	0	19
Total, Cochise County	258	65	0	0	0	323
Percent Change, Previous Year	-47	-75	—	—	—	-57
COCONINO COUNTY						
Flagstaff**	262	92	28	27	72	481
Fredonia**	1	0	0	0	0	1
Page**	10	25	2	0	0	37
Unincorporated	302	198	2	0	0	502
Williams	7	7	0	0	0	14
Total, Coconino County	582	322	32	27	72	1,035
Percent Change, Previous Year	-9	-6	23	375	-87	-34
GILA COUNTY						
Globe	5	0	0	0	40	45
Hayden	0	0	0	0	0	0
Miami**	0	1	0	0	0	1
Payson	92	85	0	0	0	177
Unincorporated	126	130	0	0	0	256
Total, Gila County	223	216	0	0	40	479
Percent Change, Previous Year	-15	2	—	—	567	0
GRAHAM COUNTY						
Pima**	2	11	0	4	0	17
Safford	17	27	0	4	0	48
Thatcher	12	18	0	0	0	30
Unincorporated	31	156	0	0	0	187
Total, Graham County	62	212	0	8	0	282
Percent Change, Previous Year	17	11	—	167	—	1
GREENLEE COUNTY						
Clifton**	0	0	0	0	0	0
Duncan**	1	0	0	0	0	1
Unincorporated	N/R	N/R	N/R	N/R	N/R	N/R
Total, Greenlee County	1	0	0	0	0	1
Percent Change, Previous Year	—	—	—	—	—	—
LA PAZ COUNTY						
Parker**	1	0	0	0	0	1
Unincorporated**	18	232	0	4	0	254
Total, La Paz County	19	232	0	4	0	255
Percent Change, Previous Year	36	78	—	—	—	77
MARICOPA COUNTY						
Avondale	242	59	0	0	5	306
Buckeye	1	15	0	0	0	16
Cave Creek**	7	0	0	0	0	7
Chandler	1,101	0	0	0	440	1,541
El Mirage**	3	7	0	0	0	10
Gila Bend	2	3	0	0	0	5
Gilbert	1,178	86	0	0	628	1,892
Glendale	759	132	4	12	380	1,287
Goodyear**	59	8	0	0	0	67
Guadalupe**	0	0	0	0	0	0
Mesa	1,778	0	0	8	241	2,027
Paradise Valley**	77	0	0	0	0	77
Peoria	1,291	0	4	0	455	1,750
Phoenix	4,524	9	30	27	2,314	6,904
Scottsdale	1,127	0	44	4	1,327	2,502
Surprise	N/R	N/R	N/R	N/R	N/R	N/R
Tempe	413	0	0	4	101	518
Tolleson**	2	0	0	0	0	2
Unincorporated	2,155	301	0	75	55	2,586
Wickenburg	14	0	0	0	84	98
Youngtown**	1	0	0	0	0	1
Total, Maricopa County	14,734	620	82	130	6,030	21,596
Percent Change, Previous Year	-18	-60	3	-43	-32	-25
MOHAVE COUNTY						
Kingman City	137	0	0	0	0	137
Kingman Area	35	257	0	0	0	292
Lake Havasu City	763	0	20	8	126	917
Lake Havasu Area	6	36	0	0	0	42
Bullhead City	251	0	12	10	88	361
Mohave Valley South	149	323	0	0	0	472
Dolan Springs	20	66	0	0	0	86
Sacramento Valley	55	186	0	0	0	241
Mohave General	23	251	0	0	0	274
Total, Mohave County	1,439	1,119	32	18	214	2,822
Percent Change, Previous Year	22	-9	129	64	2	7
NAVAJO COUNTY						
Holbrook	3	34	0	0	0	37
Pinetop-Lakeside**	28	6	0	0	0	34
Show Low**	12	33	0	0	0	45
Snowflake**	4	23	0	0	0	27
Taylor**	2	0	0	0	0	2
Unincorporated	226	13	0	0	0	239
Winslow**	8	19	0	0	0	27
Total, Navajo County	283	128	0	0	0	411
Percent Change, Previous Year	-15	-14	—	—	—	-17
PIMA COUNTY						
Marana	11	47	0	0	0	58
Oro Valley	363	0	0	0	240	603
South Tucson	5	0	0	0	0	5
Tucson	574	0	34	24	1,089	1,721
Unincorporated	2,108	25	0	0	553	2,686
Total, Pima County	3,061	72	34	24	1,882	5,073
Percent Change, Previous Year	-20	-78	-56	50	21	-17
PINAL COUNTY						
Apache Junction	31	322	0	0	112	465
Casa Grande	114	0	0	6	0	120
Coolidge**	1	17	0	0	0	18
Eloy	8	28	0	0	0	36
Florence**	0	37	0	0	0	37
Kearny**	0	0	0	0	0	0
Mammoth	N/R	N/R	N/R	N/R	N/R	N/R
Superior	0	0	0	0	0	0
Unincorporated**	261	0	0	0	0	261
Total, Pinal County	415	404	0	6	112	937
Percent Change, Previous Year	22	-11	—	-78	70	6
SANTA CRUZ COUNTY						
Nogales	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	N/R	N/R	N/R	N/R	N/R	N/R
Unincorporated	172	214	2	13	6	407
Total, Santa Cruz County	172	214	2	13	6	407
Percent Change, Previous Year	-27	-44	-50	-13	0	-37
YAVAPAI COUNTY						
Chino Valley**	10	61	0	0	0	71
Clarkdale**	22	20	6	6	0	54
Cottonwood**	23	13	2	0	0	38
Jerome**	9	0	0	3	0	12
Prescott	313	46	12	28	191	590
Prescott Valley**	166	95	8	10	0	279
Unincorporated	602	281	12	16	0	911
Total, Yavapai County	1,145	516	40	63	191	1,955
Percent Change, Previous Year	-9	-19	25	-55	5	-13
YUMA COUNTY						
Somerton	N/R	N/R	N/R	N/R	N/R	N/R
Unincorporated	183	476	0	0	0	659
Wellton	N/R	N/R	N/R	N/R	N/R	N/R
Yuma**	138	37	0	0	13	188
Total, Yuma County	321	513	0	0	13	847
Percent Change, Previous Year	-2	15	—	—	-73	2
TOTAL, ARIZONA	22,791	4,681	222	293	8,560	36,547
Percent Change, Previous Year	-17	-27	-6	-41	-26	-21

**Incomplete data: One or more months not available.

N/R: No Report.

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University.

Arizona Real Estate Center: Outlook '89 Survey

Metro Phoenix activity expected to decline in 1989, improve in 1990

For the first time since the Arizona Real Estate Center began its annual Outlook survey in 1982, most of the respondents said that they expect the Phoenix metropolitan real estate market to decline during the coming year.

The Outlook 1989 survey, sponsored by *Metro Phoenix* magazine, was conducted in December 1988 and January 1989 to provide additional insight into the evolving market. Over 200 responses were obtained from persons in four main areas of the real estate industry: homebuilding, financial services (banks, savings and loan associations, and mortgage companies), real estate brokerages (commercial and residential), and "others," including appraisal, title insurance, developers, property managers, and government.

While the majority of respondents expect economic conditions in 1989 to be similar to those experienced during 1988 (see Table 1), worsening economic conditions are foreseen by a larger number of respondents than in 1988, and they are less confident about the local economy than they are about the national economy.

The consensus outlook is for stability in the various economic indicators listed in Table 2; the 1989 responses differ little from those in 1988. The greatest variance in responses occurred in the expected level for the prime interest rate, which ranged from 7 to 15 percent.

The level of confidence in certain key areas of the real estate industry tended to be lower than in 1988. Improvement in the local economy is expected by only 39 percent of respondents, 30 percent expect the new home market to grow, 54 percent expect an increase in their firm's activity, and 35 percent expect the real estate market to improve. Confidence that the economic policy of the federal government will lead to an improving economy was expressed by 40 percent of the respondents to the 1989 survey, up from 34 percent in 1988. Only 24 percent expect inflation to be lower in 1989.

Since the residential market is greatly affected by changes in the level of mortgage interest rates, it is important to note that only 35 percent expect these rates to decrease in 1989. Table 2 shows that the respondents expect conventional rates to rise to 10.75 percent in 1989; the average rate in 1988 was 10.31 percent. A drop in the new home market in 1989 was also predicted by those surveyed; the most common response (39 percent) was for permitted activity to be in the range of 10,000 to 14,999 homes in 1989, below the 15,000 to 19,999 permit level projected by the 1988 survey.

The strongest evidence of the lowered expectations for the local real estate market in 1989 is the anticipation by survey respondents that market activity, as presented in Table 2, will remain unchanged. The only exception to this pattern is the almost unanimous opinion that land prices will decline.

While most respondents expect the Phoenix metropolitan real estate market to decline during the year, a similar number anticipate the 1990 real estate market to be better than 1989. This optimism is evidence that, in spite of the limited expectations for the coming year, the Phoenix real estate market still retains the dynamic quality that can be expected to propel it to higher levels in the coming years.

– Jay Q. Butler

Dr. Butler is Associate Professor of Real Estate and Director of the Arizona Real Estate Center in the ASU College of Business.

TABLE 1

ECONOMIC OUTLOOK SCORES*

Economic Variable	1988	1989
Consumer confidence	48	37
Phoenix area economy	50	39
Retail sales	43	39
National economy	35	43
Phoenix employment	44	39
National employment	33	43
Business confidence	46	42

* Metropolitan Phoenix real estate industry representatives had three reply options to each survey question: Higher, Same or Lower. The score for each question was calculated by averaging the weighted replies. The weights: Higher - 100; Same - 50; Lower - 0. Scores may range from 0 to 100, with higher scores reflecting a greater degree of optimism. Scores near 50 indicate an expectation of no change; scores above 50 indicate expected improvement, and scores below 50 indicate expected worsening.

Source: Survey conducted by the Arizona Real Estate Center in the College of Business, Arizona State University.

TABLE 2

1988 AND 1989 CONSENSUS OUTLOOKS COMPARED TO ACTUAL 1988
Metropolitan Phoenix

		Percentage Rate	
Variable	*1988 Projection*	*Actual Year-end,1988*	*1989 Projection*
Conventional mortgage rate	10.4	10.6	10.75
VA mortgage rate	10.0	10.5	10.5
Prime interest rate	8.25	10.5	10.0
Commercial interest rate	11.0	N/A	11.0
Six-month Treasury Bill rate	7.0	8.1	8.0
Inflation rate (Metropolitan Phoenix)	4.0	4.1	4.0
Apartment vacancy rate	14.0	14.0	15.0
Unemployment rate (Metro Phoenix)	6.0	5.1	6.0

		Percent Change	
	1988 Projection	*Actual 1988*	*1989 Projection*
Resale-home prices	2.0	0.5	0.0
New-home prices	2.0	4.3	0.0
Land prices	0.0	N/A	-2.5
Level of firm's activity	0.0	N/A	0.0
Resale-home market activity	0.0	-10.0	0.0
Monthly rent for apartments	0.0	0.3	0.0

N/A = Not Available

Source: Center for Business Research and Arizona Real Estate Center, College of Business, Arizona State University

Coincident indexes measure further gains in December

Moderate to relatively large economic advances were registered across Arizona in December, continuing the recovery from the state's declines during spring and summer 1988. Such strong gains, however, which occurred for the third month in a row, overstate the underlying health of the economy in the same way that the declines earlier in the year exaggerated its weaknesses. A preliminary look at January's unemployment and employment data suggests a more modest growth rate.

The coincident economic index for the Phoenix area reached a new high of 150.4 (1982=100) in December after rising 0.9 percent. Gains in October and November were 0.6 percent and 1.4 percent respectively, following revisions (see page 15).

In the Tucson area, December's growth moderated a bit to 0.6 percent, following gains of 0.8 percent in October and 1.8 percent in November. December's index reached a record high of 140.9.

The growth rate in rural Arizona in December — 0.4 percent — was much less than the 1.2 percent and 2.2 percent figures of October and November, although the index reached a peak of 132.8. In contrast to growth rates in the urban areas, rural Arizona's growth rate in January probably was higher than in December.

During the six months from April through September, each index component in each geographic area declined. In the last three months of the year, however, each component in each area gained. The only exception was employment in Maricopa County, which dropped, accounting for the Phoenix area's smaller overall gains in October and November. Thus, while big changes in the unemployment rate (see Figure I) accounted for most of the swing from declines to strong advances in the indexes, all components contributed (see Figures II, III, and IV).

In December, the sharp decline in the unemployment rate was the primary reason for the index advance in each geographic area. Maricopa County's gain was the largest because of an increase in the commercial building permit component, which dropped elsewhere. Though employment rose in non-urban Arizona and was nearly unchanged in the metro areas, retail sales declined in rural Arizona but climbed in the urban areas. The composite index for the state rose 0.8 percent to 145.7.

FIGURE I

UNEMPLOYMENT RATE, SEASONALLY ADJUSTED
Percent

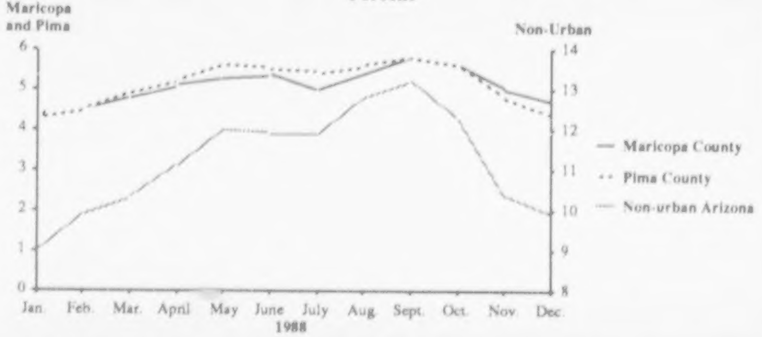


FIGURE II

WAGE AND SALARY EMPLOYMENT, SEASONALLY ADJUSTED
In Thousands

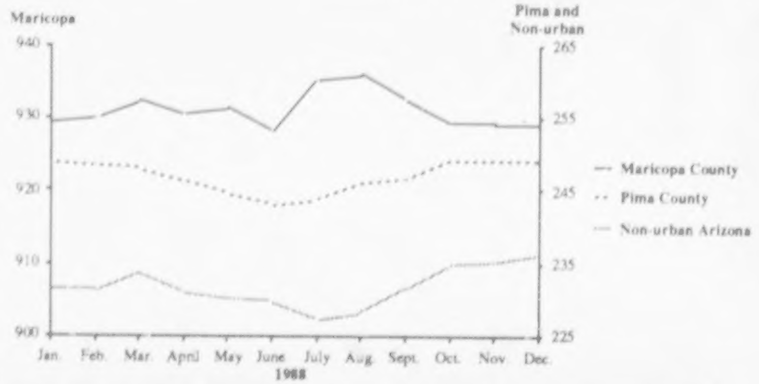
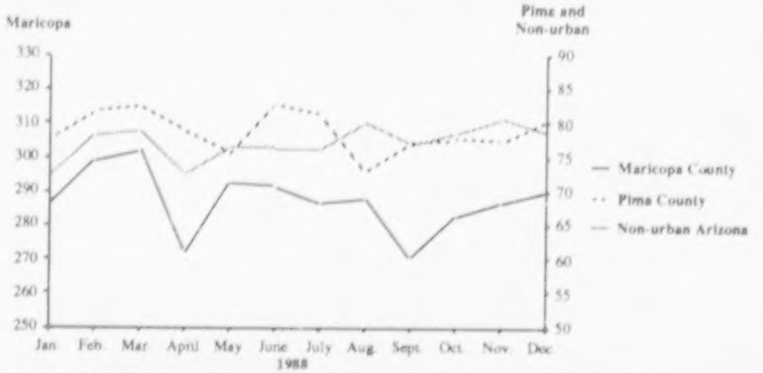


FIGURE III

RETAIL SALES, SEASONALLY ADJUSTED
Millions of 1967 Dollars



Source: Figures I and II, Arizona Department of Economic Security. Figure III, Arizona Department of Revenue. Seasonal adjustment by the Center for Business Research, College of Business, Arizona State University.

REVISIONS

Changes to the employment and unemployment series produced by the Arizona Department of Economic Security necessitated updates to the coincident indexes. Contrary to the expectations of most economists, the revised employment figures for 1988 did not increase substantially, but rather dropped slightly. While this change did not have a large impact on the coincident indexes, the opposite was true of the substantive revisions to the unemployment series.

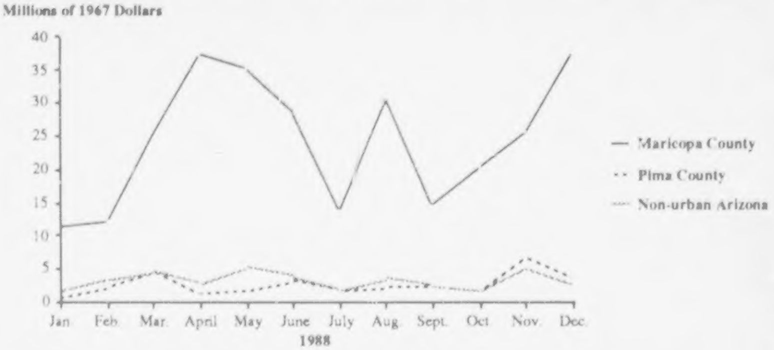
Though the annual average unemployment rate during 1988 was little changed by the revision, the monthly pattern was dramatically revised. Instead of a gradual increase throughout the year as originally reported, the unemployment rate rose considerably during the first half of the year, peaking in late summer. The rate fell sharply during the last two months of the year.

The figures for late 1988 are subject to further revision; such additional changes to 1987 data were still unavailable when this article was written. Thus, while further changes to the coincident indexes will occur next month, they will not affect the monthly changes shown in Table 1. In each geographic area, the revised coincident index shows weaker growth during the first half of 1988 than previously reported, but stronger growth during the last three months of the year.

– **Tom R. Rex**
Research Manager

FIGURE IV

VALUE OF COMMERCIAL BUILDING PERMITS, SEASONALLY ADJUSTED



Source: Center for Business Research, College of Business, Arizona State University.

TABLE 1

MONTHLY PERCENT CHANGE IN COINCIDENT INDEXES

	Maricopa		**Pima**		**Non-urban**	
1988	*Original*	*Revised*	*Original*	*Revised*	*Original*	*Revised*
February	.5	.0	.8	.2	–.5	–.2
March	.8	.2	.3	–.2	.6	.5
April	.2	–.4	–.8	–1.2	–.9	–1.4
May	.2	.2	–.6	–.8	–.5	–.3
June	–.2	–.3	.5	.4	.0	.0
July	–.2	.8	–.4	.3	–1.2	–.7
August	–.1	.1	.1	.2	.3	.2
September	–.9	–1.2	.2	.2	.1	.3
October	–.3	.6	.2	.8	.6	1.2
November	.7	1.4	.9	1.8	1.6	2.2
December	—	.9	—	.6	—	.4

Source: Center for Business Research, College of Business, Arizona State University.

Economy on hold: February purchasing indicators

The Arizona economy stalled in February, with both new orders and production at zero growth and employment down for the fourth month in a row. The only really positive factor was that the rate of inflation slowed somewhat.

While the Federal Reserve has made the fight against inflation its top priority and is keeping strong upward pressure on interest rates, slow or no growth seems in the cards for Arizona over the first half of 1989.

– **Harold Fearon**

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

TABLE 1

FEBRUARY PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (February compared to January)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	47	49	4
Delivery time from vendors	31	59	10
Purchased materials inventory level	33	45	22
New orders received	31	38	31
Production	28	44	28
Employment	16	63	21
Purchases	39	36	25

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Year-to-Date Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	3rd Qtr.	60.034	1.6	5.4	NA	NA
Arizona - 1982 Dollars	3rd Qtr.	48.002	0.7	1.5	NA	NA
COINCIDENT ECONOMIC INDEXES (1982 = 100)						
Arizona	Dec.	145.7	0.8	2.7	NA	NA
Metropolitan Phoenix	Dec.	150.4	0.9	2.8	NA	NA
Metropolitan Tucson	Dec.	140.9	0.6	2.7	NA	NA
Non-urban Arizona	Dec.	132.8	0.5	2.3	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	4th Qtr.	122.5	1.3	5.1	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Jan.	109.7	-0.7	-0.5	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Dec.	230,315	-4	13	3,413,685	-11
Pima County	Dec.	27,892	-35	-39	464,226	-22
Balance of State	Dec.	85,239	55	88	720,508	8
Arizona	Dec.	343,446	1	16	4,598,419	-9
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Dec.	1,243	0	-39	21,596	-24
Pima County	Dec.	204	-12	-18	5,073	-17
Balance of State	Dec.	,634	-42	-35	9,878	-11
Arizona	Dec.	2,081	-19	-36	36,547	-20
HOME SALES						
Maricopa County - Number	Jan.	3,750	1	10	3,750	10
Maricopa County - Median Price	Jan.	82,275	-0.9	1.6	82,275	1.6
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	3rd Qtr.	92	-2.1	2.2	NA	NA
Metropolitan Phoenix - Resale Homes	3rd Qtr.	119	-1.7	5.3	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	Feb.	10.7	0.0	8.1	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	4th Qtr.	2,037	0.6	2.2	NA	NA
Arizona	4th Qtr.	3,534	0.8	2.2	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Jan.	3,596	-1.5	7.9	3,596	7.9

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University.

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Winter residents increase 8 percent in 1988-89

An estimated 96,400 seasonal residents were living in the mobile home and RV/travel trailer parks in the Phoenix metropolitan area (including the Apache Junction area of Pinal County) at the height of the 1988-89 season. This represents a 8 percent increase over the previous year, in spite of the fact that the Arizona economy was experiencing a marked slowdown in permanent in-migration.

These findings are based upon an annual census of mobile home and RV/travel trailer parks, conducted since 1983-84 as part of ongoing ASU College of Business research on seasonal migration and its impact on the local economy. During the second week of February, questionnaires were mailed to the parks in the Phoenix area asking about the number of spaces, occupancy rates, spaces currently occupied by seasonal residents, and the number of months in which the occupancy rate was 90 percent or greater. Follow-up phone and mail surveys attempted to contact those parks not responding to the original mailing. Usable information was obtained from 333 of the 666 known parks in the Phoenix area, representing 82 percent of the total spaces.

RESULTS

Table 1 (page 2) presents the number of mobile home and RV/travel trailer spaces, occupancy rates, and number of winter residents by geographical area for the first week of February 1989. The total number of park spaces in the Phoenix area declined slightly during the past year to 98,200; there were 300 fewer mobile home spaces in the East Valley, 600 fewer in Phoenix, and 500 fewer in the West Valley. This decrease is partially due to the closing of 10 parks and the fact that no new parks were added during the past year. In addition, a sizable number of parks had lower occupancy of mobile home spaces, possibly associated with the ongoing contraction of the construction sector and a resulting exodus of construction workers. Many of these parks designated former mobile home spaces as RV/travel trailer spaces to be occupied by 1988-89 winter residents.

The occupancy rate for mobile home spaces across the Valley remained at 85 percent, while the occupancy rate for RV/travel trailer spaces rose from 84 percent at the height of last year's season to 90 percent in February 1989. In seeking reasons for the increased occupancy levels, it appears that several of the big parks that had difficulty in filling up in previous years experienced a higher level of demand for RV/travel trailer spaces this year. The 15 parks in the Valley with 1,000 spaces or more showed sharp increases in RV/travel trailer occupancy rates compared to the 1987-88 season.

Economic impact still strong

In addition to higher occupancy rates in the RV/travel trailer parks, the percent of spaces occupied by winter residents also increased substantially for the 1988-89 season. Valleywide, the proportion of spaces occupied by seasonal residents rose from 53 to 56 percent, with increases from 67 to 70 percent in the East Valley, 20 to 25 percent in Phoenix, and from 31 to 34 percent in the West Valley.

With both higher occupancy rates and a greater proportion of spaces occupied by winter residents, the estimated number of snowbird households increased to 48,200 in 1989—8 percent above the 1988 estimate of 44,500. Assuming two persons per household, as indicated by our previous research, this household estimate implies that there were more than 96,000 seasonal residents living in Valley parks at the height of the 1988-89 winter season.

This year's results run counter to expectations prior to conducting the census in February. Last year, the estimated number of winter resident households declined, even though the total number of occupied spaces had increased. At the time (see *Arizona Business*, June 1988), it was surmised that fewer households living in the parks were being identified as seasonal residents since more were becoming permanent residents of Arizona. During the 1988-89 season, any such trend was swamped by an influx of additional winter residents that more than replaced declines in mobile home occupancy rates related to the local economic slowdown. Prosperous economic conditions and harsh winter weather in many of the states from which Arizona

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draws winter visitors apparently stimulated the flow of elderly seasonal residents to the Valley of the Sun during the past winter.

The increased numbers of seasonal residents in Phoenix area parks seems to have resulted in a change in the occupancy pattern relative to the 1987-88 season. Table 2 displays the number of months that East Valley parks were full during this past season. The proportion of parks that were full for two months or less rose considerably (15 versus 0 percent for mobile home parks, 37 versus 15 for RV/travel trailer parks, and 22 versus 8 percent for mixed parks). The proportion of parks reporting that they were full for 3 to 5 months of the year also fell compared with the previous year. It appears that the new winter residents are not staying as long or that there are fewer snowbirds passing through the parks during off-peak months.

Park managers were asked whether they had more or fewer winter residents this February compared to the previous season (see Table 3). The proportion of parks reporting more snowbirds increased across the Valley, and the percent of parks with fewer seasonal residents than in 1988 fell in all three areas, further confirming that the number of park snowbirds increased during the 1988-89 season.

TOTAL WINTER RESIDENT POPULATION

The ASU Winter Resident Project concentrates on the population of predominantly elderly seasonal residents who stay in mobile home and RV/travel trailer parks—the most visible and single largest group of snowbirds in the Phoenix area. But substantial numbers of visitors come to the Valley of the Sun each winter and stay in seasonal apartment complexes, in homes or condos that they rent or own, with friends or relatives, or in hotels/motels/resorts. Unfortunately, enumerating these non-park snowbirds is very difficult and costly, and accurate estimates of their numbers are simply not available. For the past several years, the total number of snowbirds in the Phoenix area has been estimated using information from a survey undertaken for Western Savings during the 1985-86 season and reported in *Forecast 86*. The proportion of the total winter resident population residing in mobile home/RV/travel trailer parks reported in this 1985 survey implies that in February 1989, there were approximately 103,000 snowbird households or 206,000 winter residents staying in the Valley of the Sun.

This estimate of the total seasonal resident population should be viewed with caution for two reasons. First, the information on living arrangements of snowbird households is based upon a sample of only 500 households, not a large comprehensive study. Second, the survey was conducted in 1985, and there is a strong probability that the pattern of living arrangements by seasonal resident households has changed in the past 4 years. Until better information is available, estimates of the total number of winter residents in the Phoenix area will remain, at best, educated guesses.

ECONOMIC CONTRIBUTION

The relative benefits versus costs associated with the arrival of the snowbirds each winter remains a controversial issue. Every year, questions are raised concerning the seasonal congestion of the area's roads and other facilities, and whether the snowbirds pay their fair share of taxes.

On the benefit side, it is clear that the expenditures of seasonal residents (and tourism in general) provide a very important stimulus to the local economy each winter. During the 1986-87 season, households in four East Valley parks were surveyed to derive information on length of stay and household expenditure patterns. The results indicated an average length of stay of approximately 4 months and average monthly expenditures of approximately $1,000 per household during their stay. Based upon these findings, the estimate of 48,200 households staying in area parks implies that park snowbirds injected $193 million in consumer spending into the local economy during the 1988-89 season.

This total expenditure figure is a conservative estimate since (1) it does not include any monies spent locally to purchase mobile homes, RVs, or travel trailers; (2) medicare payments and other third-party reimbursements to local providers are not counted; and (3) it assumes that rent is paid only for the average length of stay even though many snowbird households rent spaces on a yearly basis.

TABLE 1

WINTER RESIDENTS IN METROPOLITAN PHOENIX MOBILE HOME AND TRAVEL TRAILER/RV PARKS

1988-1989 Census by Geographic Area

	East	*Phoenix*	*West*	*Total*
Number of Mobile Home Spaces	31,000	15,700	10,200	57,000
Occupancy Rate	82%	93%	85%	85%
Number of Travel Trailer/RV Spaces	33,700	2,600	4,900	41,200
Occupancy Rate	92%	88%	78%	90%
Number of Occupied Spaces	56,700	16,600	12,500	85,800
Percent of Spaces Occupied by Winter Residents	70%	25%	34%	56%
Number of Winter Resident Households	39,700	4,200	4,300	48,200

TABLE 2

DURATION OF 90 PERCENT OR MORE OCCUPANCY

By Type of Park, East Valley

Months	*Mobile Home Parks*	*Travel Trailer RV Parks*	*Mixed Parks*	*All Parks*
0 or 1	12%	17%	11%	12%
2	3	20	11	11
3	3	13	7	8
4	3	17	7	8
5	6	7	11	8
6	15	20	23	19
7 or more	58	6	30	34
TOTAL	100	100	100	100
MEDIAN	8 months	3 months	6 months	6 months

Source (Tables 1 & 2): Census conducted by the authors, February 1989.

To address the question concerning taxes paid by winter residents, revenues from four major taxes paid by snowbird households—sales, rental occupancy, motor fuel, and utility taxes—during their stays in the Valley of the Sun during the 1988-89 season were estimated (Table 4). The estimated revenues collected by these four taxes from the park winter residents total more than $10 million. Like the expenditure estimates, this estimate of tax revenues collected from the snowbird population residing in area parks is very conservative, since it does not by any means include all of the taxes directly paid or indirectly generated by the seasonal resident population. For example, it does not include: (1) property taxes; (2) sales taxes on mobile home/RV/travel trailer purchases; (3) income taxes earned from local sources; (4) registration fees for vehicles left in Arizona; and (5) luxury taxes on such items as tobacco and alcoholic beverages.

TABLE 3

COMPARISON OF WINTER VISITOR BUSINESS
1988-89 VERSUS 1987-88 SEASONS
By Geographical Area

	East Valley	*Phoenix*	*West Valley*	*Total*
Parks with more seasonal residents than in 1986-87	25%	8%	16%	20%
Parks with similar numbers of seasonal residents	59	69	67	62
Parks with fewer seasonal residents than in 1986-87	10	17	7	11
Not Applicable/No Answer	6	6	10	7
TOTAL	100	100	100	100

Source: Census conducted by the authors, February 1989.

TABLE 4

ESTIMATED STATE AND LOCAL TAX REVENUES
FROM FOUR MAJOR SOURCES
1988-89 Season

Sales Tax	$ 3,600,000
Rental Occupancy Tax	4,100,000
Motor Fuel Tax	1,200,000
Utility Taxes	1,400,000
TOTAL	10,300,000

Source: Based upon household expenditure information collected by in-park household surveys conducted by the authors, 1986-87.

CURRENT AND FUTURE RESEARCH

This winter season, in addition to the park census, household surveys were conducted in 14 parks. The sample of parks was chosen to mirror the size distribution and the mix of mobile home and RV/travel trailer parks in the overall park population. This expansion of the household survey will provide a more precise and comprehensive view of the snowbird population and more accurate estimates of the economic impact of the seasonal resident population upon the Phoenix area. The survey data are now being processed, and the findings will be reported in an upcoming issue of *Arizona Business*.

Judging from the volume of requests for data concerning the snowbird population, it appears that many businesses, public agencies, and individuals are interested in obtaining more information about the state's winter resident population. Current public data collection activities, however, such as the decennial census, do not collect data that allow study of seasonal populations. Until a more comprehensive research effort directed at analyzing and monitoring the annual influx of seasonal residents can be established, many of the questions asked about this large and growing (but part-time) segment of Arizona's population will remain unanswered. The current ASU Winter Resident Project studies only the portion of the snowbird population that stays in Valley mobile home/RV/travel trailer parks, which the *Forecast 86* survey data indicate comprise only one-half of the total winter resident population. Unfortunately, current sponsorship is not sufficient to expand the research to include study of the seasonal residents living in other accommodations. Ideally, an ongoing telephone survey of area households could provide valuable information about the Valley's seasonal population, as well as current data on permanent residents not available from existing public sources.

– Stephen K. Happel
– Timothy D. Hogan

Dr. Happel is Associate Professor of Economics and Dr. Hogan is Professor of Economics and Director of the Center for Business Research in the ASU College of Business.

The authors gratefully acknowledge the sponsorship of this year's efforts by the Salt River Project, the Arizona Office of Tourism and Western Savings, and the cooperation of the park owners/managers who provided information relating to their parks. We would also like to thank Susan Lewis, Andea Hlosek, Jill McPheters, and Sally Weschler for their help on the survey.

For more detailed information about the ASU Winter Resident Project, contact the Center for Business Research (602-965-3961).

Conference on
The 1987 Economic Census
May 23, 1989

To acquaint businesses and individuals with the wealth of business information available from the Economic Censuses, the U.S. Census Bureau, the Arizona State Data Center and the Phoenix Chamber of Commerce will conduct a conference May 23, 1989 at the Westcourt at the Buttes Hotel in Tempe. The registration fee for the one-day conference is $30.00. To register or to obtain more information, call the Phoenix Chamber of Commerce at (602) 254-5521, ext. 137.

Valley inflation lowers a bit in first quarter

Prices of Phoenix area goods and services rose a moderate 1.1 percent during first quarter 1989, dropping back into the 0.7 to 1.3 percent-per-quarter range experienced during much of 1987 and 1988. The greater increase in fourth quarter 1988 (see Table 1) seems to have been an aberration.

Before seasonal adjustment, the Metropolitan Phoenix Consumer Price Index climbed 1.0 percent to 123.7 (1982–84 =100). The annual increase reached 5.4 percent, the most since mid-1985, but this rate is unlikely to advance much further in 1989. Relatively large increases in the second and fourth quarters of 1988 are unlikely to be exceeded in 1989.

TABLE 1

PERCENT CHANGES IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Seasonally Adjusted from Preceding Quarter				
Expenditure Category	*Relative Importance*	*1st 1988*	*2nd 1988*	*3rd 1988*	*4th 1988*	*1st 1989*
ALL ITEMS	100.0	0.8	1.3	0.9	2.0	1.1
Food and Beverages	16.5	0.9	2.0	1.3	1.4	1.9
Housing	41.7	1.0	0.2	0.4	1.7	–0.1
Apparel and Upkeep	6.1	2.3	2.9	3.6	1.5	0.7
Transportation	19.3	–0.5	2.4	1.0	3.1	3.0
Medical Care	6.8	0.3	3.3	0.4	2.8	1.2
Entertainment	4.6	1.2	0.1	1.2	3.6	2.1
Other Goods and Services	5.0	2.2	0.9	0.8	1.1	1.2

TABLE 2

METROPOLITAN PHOENIX CONSUMER PRICE INDEX
First Quarter 1989

	Index (1982-84 = 100)		Percent Change from	
Expenditure Category	*Last Quarter*	*This Quarter*	*Last Quarter**	*Year-Ago Quarter*
ALL ITEMS	122.5	123.7	1.1	5.4
Food and Beverages	121.7	124.3	1.9	6.6
Food	120.6	123.5	2.2	6.9
Food at Home	123.4	128.1	3.5	9.1
Cereal and Bakery Products	133.2	140.5	4.1	6.1
Meats, Poultry, Fish, and Eggs	116.5	119.2	2.5	9.4
Dairy Products	111.3	116.2	4.4	2.7
Fruits and Vegetables	158.2	171.3	8.6	35.0
Other Food at Home	115.8	117.3	–0.1	1.8
Food Away from Home	117.6	118.3	0.6	3.8
Housing	117.0	116.6	–0.1	2.5
Shelter	115.6	116.5	0.8	0.6
Renters' Costs**	116.9	116.5	–0.3	–2.6
Homeowners' Costs**	119.1	120.5	1.2	2.1
Fuel and Other Utilities	121.2	114.5	–2.4	6.0
Gas (piped) and Electricity	115.3	105.6	–2.8	4.8
Household Furnishings/Operations	116.8	118.0	–0.7	4.4
Apparel and Upkeep	124.7	125.4	0.7	9.4
Transportation	120.7	124.6	3.0	9.6
Private Transportation	120.1	124.2	2.3	8.6
New and Used Cars	132.8	136.3	2.1	6.8
Motor Fuels	75.5	77.6	0.8	5.3
Public Transportation	118.8	121.9	5.7	14.7
Medical Care	150.8	153.1	1.2	7.6
Entertainment	144.9	147.7	2.1	6.3
Other Goods and Services	134.3	135.9	1.2	4.0

*Seasonally adjusted.
**Base period is second quarter 1983.

Source (Tables 1 & 2): Compiled by the Center for Business Research, College of Business, Arizona State University; in co-sponsorship with Valley National Bank.

COMPONENT INDEXES

Most of the CPI increase can be traced to just two major categories: transportation and food and beverages. In the latter case, higher inflation was limited to grocery items, with some foodstuffs still feeling the effects of the 1988 drought.

Food and Beverages

The 3.5 percent increase in food at home prices was the greatest in more than five years. Sizeable gains occurred in four of its five major subcategories (see Table 2). The jump in prices of dairy products was the most in at least five years while the boost in fruit and vegetable prices was the fifth successive large increase. Produce prices in first quarter 1989 were 35 percent higher than in first quarter 1988.

In contrast, food away from home prices rose only 0.6 percent and prices of alcoholic beverages declined 0.3 percent.

Housing

Housing costs fell for the first time since fourth quarter 1985. Renters' costs, prices of household furnishings and operations, and fuel and other utility costs all declined. Only homeowners' costs rose, though the 1.2 percent advance brought the annual gain to only 2.1 percent.

Transportation

Transportation costs jumped 3 percent, the second straight large increase. Used car prices soared and auto insurance premiums continued to surge; the advance totalled 25 percent in the four quarters through first quarter 1989. Public transportation fares rose nearly 6 percent in the first quarter and 15 percent during the last four quarters. Though not as large, the increase in vehicle finance charges was the most in four and one-half years.

Medical Care

Despite the biggest health insurance premium hike in four years and a big gain in prescription drug prices, medical care costs rose moderately. Professional medical services fees hardly changed.

Other Categories

Apparel and upkeep cost increases lessened for the second straight quarter. Inflation in the other goods and services category remained moderate, while gains in the entertainment category continued to outpace the all-items average.

COMPARISON AREAS

Before seasonal adjustment, inflation in the first quarter was about equal to the national average (see Table 3). Higher inflation in the transportation and apparel and upkeep categories was offset by lower inflation in most other categories. The annual inflation rate remained slightly higher in the Phoenix area, again primarily due to the transportation and apparel categories.

OUTLOOK

The first quarter inflation rate was lower than expected, but may be made up in the second quarter. Then inflation probably will be at the upper end of the 1.0 to 1.5 percent quarterly range assumed for the rest of 1989, resulting in an annual inflation rate for 1989 of about 5 percent.

– Tom R. Rex
Research Manager

TABLE 3

METROPOLITAN PHOENIX AND UNITED STATES CONSUMER PRICE INDEXES
First Quarter 1989

	Percent Change from Last Quarter*		Percent Change from One Year Ago	
Expenditure Category	*Phoenix*	*United States*	*Phoenix*	*United States*
ALL ITEMS	1.0	1.1	5.4	4.8
Food and Beverages	2.1	2.1	6.6	6.0
Housing	–0.3	1.0	2.5	3.9
Apparel and Upkeep	0.6	–3.8	9.4	4.6
Transportation	3.2	0.8	9.6	4.5
Medical Care	1.5	2.4	7.6	7.2
Entertainment	1.9	1.7	6.3	5.1
Other Goods and Services	1.2	2.2	4.0	7.4

*Not seasonally adjusted

Source: Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data are from the U.S. Department of Labor, Bureau of Labor Statistics.

Weak retail sales continued in 1988

Retail sales growth in Arizona continued to flounder in 1988, further exacerbating the state's budget problems.

As seen in Table 1, nearly two-thirds of the sales occurred in the Phoenix area, with the rest nearly evenly split between the Tucson area and rural Arizona. Among the rural counties, Coconino registered the greatest sales in each category, accounting for 4.3 percent of restaurant and bar sales — well above the level of next-ranked Yavapai County — and 2.6 percent of retail sales, barely higher than Yuma County's total.

In 1988, statewide retail sales rose 4.7 percent; restaurant and bar sales gained 5.1 percent. Neither figure was much above the 4.1 percent inflation rate measured both nationwide and in the Phoenix area. Once population growth of 2.2 percent is factored in, real per capita sales declined.

This was the second consecutive year of marginal inflation-adjusted gains and declines on a real per capita basis. The situation was worse in Maricopa County (see Table 2), where real per capita sales declined for the third straight year.

Sales were particularly weak between July and October, probably the result of the numerous layoffs experienced during the spring and summer. Holiday season sales perked up a bit, but were flat compared to the prior year on a real per capita basis.

TABLE 1

1988 TAXABLE SALES
(In Millions of Dollars)

	Retail	Share of State	Restaurant and Bar	Share of State
ARIZONA	$16,135	100.0%	$2,720	100.0%
Maricopa	10,502	65.1	1,720	63.3
Pima	2,849	17.7	502	18.4
Non-metropolitan	2,784	17.2	498	18.3

Source (Tables 1, 2 & 3): Center for Business Research, College of Business, Arizona State University from Arizona Department of Revenue data.

TABLE 2

1988 PERCENT CHANGE IN TAXABLE SALES ON AN INFLATION-ADJUSTED PER CAPITA BASIS

	Retail	Restaurant and Bar
ARIZONA	–1.6%	–1.2%
Maricopa	–2.3	–1.8
Pima	–1.9	–0.5
Non-metro	1.3	0.8

TABLE 3

1988 TAXABLE SALES PER CAPITA

	Retail	Restaurant and Bar
ARIZONA	$4,601	$776
Maricopa	5,212	854
Pima	4,356	767
Non-metro	3,363	601

The weakness in retail sales has varied widely by category. Sales at general merchandise stores and, to a lesser extent, at apparel and accessory stores have held up well. In contrast, sales of "big -ticket" items such as autos and furniture were below year-earlier levels, even before inflation and population adjustment.

Tourism, which has remained healthy, has positively affected retail sales. Tourist spending boosts the level of per person sales shown in Table 3.

– Tom R. Rex
Research Manager

Coincident index growth slows in January

Economic growth across Arizona slowed in January following three months of strong gains. Preliminary data for February suggests another sluggish month, perhaps poorer than in January. Thus, the burst of growth in fall 1988 merely offset the extremely weak conditions during spring and summer 1988.

The coincident economic index for the Phoenix area rose a modest 0.2 percent in January; the index reached 150.7 (1982=100). The advance in the Tucson area was slightly less at 0.1 percent, putting the index at 141.1. Non-urban Arizona's growth rate was the fastest in the state for the third time in four months, climbing 0.4 percent in January; the index hit 133.4.

Employment rose in each area in January. Retail sales improved a bit in Maricopa County, but fell elsewhere. Likewise, the unemployment rate dipped in the Phoenix area, but worsened in the rest of the state. The value of commercial building permits, however, plunged in the Phoenix area to the second lowest value since 1982. In contrast, the value rose elsewhere; Pima County registered the third straight month of relatively strong commercial building permit activity.

In the four months through January, expansion of the coincident indexes was greatest in rural Arizona and least in Maricopa County. The biggest difference occurred in the employment component, though the building permit indicator was weakest in Maricopa County and the unemployment component was strongest in rural Arizona.

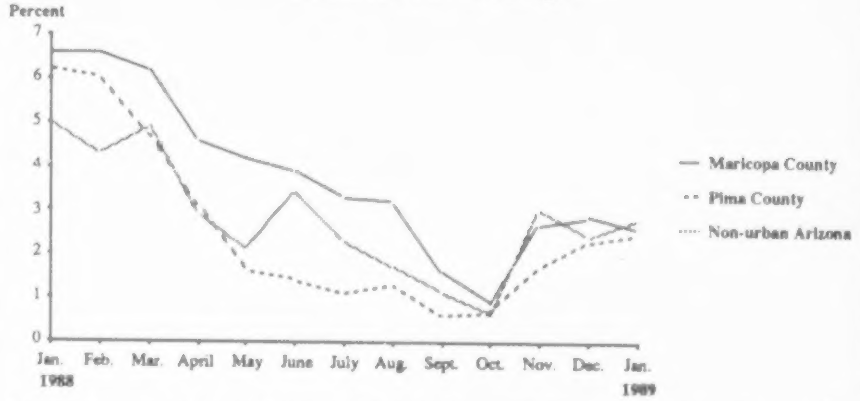
The annual growth rates shown in Figure I illustrate the deceleration of economic growth during 1988, to rates less than 1 percent. Though the annual rates have recovered somewhat, they seem to have stabilized around 2.5 percent in each of Arizona's geographic areas.

The composite index for the state rose 0.2 percent in January to 145.9, 2.5 percent higher than in January 1988.

– Tom R. Rex
Research Manager

FIGURE I

COINCIDENT ECONOMIC INDEXES
Year-to-Year Percent Changes



Source: Center for Business Research, College of Business, Arizona State University.

March purchasing indicators show encouraging signs

With the coming of spring, the Arizona economy appears to be working out of its stall and is showing the first signs of a higher growth rate. New orders received showed the strongest growth since last August, reversing four months of no growth. Production started up again after three months of very sluggish performance. Employment registered zero growth, after four consecutive monthly declines. Inflation still is present, but the rate of price increases is holding steady. March turned in the best overall economic performance since early last fall.

While one month's positive economic performance is no guarantee that it will continue, the growth rate of the Arizona economy is stepping up. The Arizona economy will not enjoy a sharp rebound and the growth rate likely will be slower than desired, but the economy should get stronger as the year develops.

– **Harold Fearon**

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

TABLE 1

MARCH PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (March compared to February)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	47	50	3
Delivery time from vendors	32	62	6
Purchased materials inventory level	31	41	28
New orders received	35	45	20
Production	29	51	20
Employment	17	66	17
Purchases	37	38	25

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Arizona leading index declines in February

The Arizona Index of Leading Economic Indicators fell again in February to 118.3. The February number was 0.6 percent lower than the revised 119.0 number for January 1989 (1982 = 100). The revised index has declined for two months after being flat in December.

Residential building permits, the money supply, production, new orders, employment, and delivery times had a negative impact. Sensitive prices, manufacturing hours worked, and inventories were positive influences.

REVISIONS

Two changes were made in the index this month. First, initial claims for unemployment insurance were dropped from the index because the Arizona Department of Economic Security is currently unable to supply the information. Also, the base year of the index was changed to 1982 from 1977.

The loss of the initial unemployment insurance claims series will hopefully only be temporary. It will be reintroduced to the index as soon as it becomes available. In addition, we will be investigating other ways to strengthen the index.

The base has been changed to simplify comparison with the national leading index which also has a base year of 1982. The adjusted index is calculated by dividing each unadjusted index value by the average value of the index in the base year.

OUTLOOK

The revised Arizona Leading Index has declined for two straight months, primarily as a result of weak residential building permit numbers and a falling money supply.

Residential building permit numbers continue to be erratic. There is some evidence in the construction employment data that the loss of construction jobs is slowing. However, construction will continue to be a drag on the Arizona economy for some time to come.

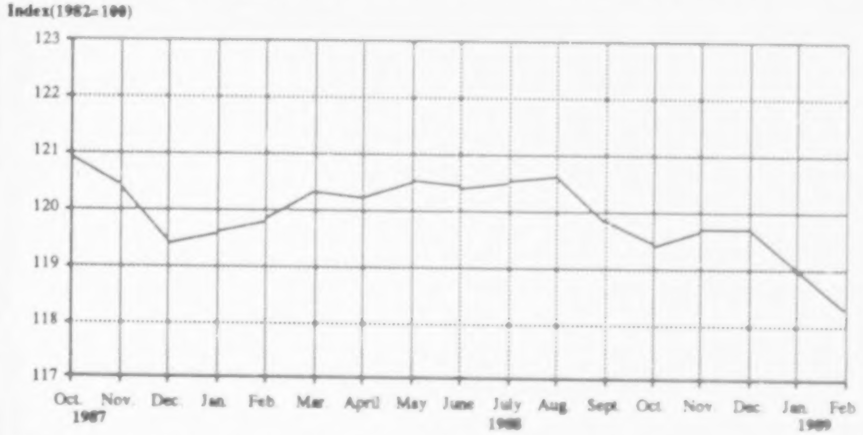
The money supply has fallen for two months, indicating that the Federal Reserve is acting to restrain the economy in order to put the brakes on inflation. The Fed is walking a tightrope between slowing the economy enough to affect inflation and slowing the economy so much that it is thrown into a painful recession.

The index suggests continued weakness in the state's economy, leaving Arizona still vulnerable to a slowdown in the national economy.

– Tracy L. Clark, *Economist*
Economic Outlook Center

FIGURE I

ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

TABLE 1

NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution⁺			
	Nov.	*Dec.*	*Jan.*	*Feb.*
Delivery Time*	.00	.02	−.01	−.02
Inventory Levels*	−.10	−.09	.11	.02
New Orders*	−.02	−.05	−.04	−.07
Production*	−.01	−.06	−.14	−.09
Employment*	−.01	−.03	−.03	−.06
Residential Building Permits	.16	.09	−.09	−.36
Average Workweek, Manufacturing	.14	.00	−.10	.07
Money Supply	.16	.01	−.34	−.13
Change in Sensitive Materials Prices	−.01	.04	.07	.11
OVERALL INDEX CHANGE (%)	.30	−.06	−.57	−.54

⁺The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the Purchasing Management Associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

The Arizona leading index is based on 9 economic indicators, combined and weighted to project the pace of economic activity several months ahead. Five of the components come from a monthly survey of Arizona purchasing managers conducted by Dr. Harold Fearon. The Arizona Index of Leading Economic Indicators is sponsored by Citibank (Arizona).

ARIZONA ECONOMIC INDICATORS

					Year-to-Date	
	Month or Quarter	*Value*	*Percent Change from Previous Period*	*Percent Change from Year Ago*	*Value*	*Percent Change from Year Ago*
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	3rd Qtr.	60.034	1.6	5.4	NA	NA
Arizona - 1982 Dollars	3rd Qtr.	48.002	0.7	1.5	NA	NA
COINCIDENT ECONOMIC INDEXES (1982 = 100)						
Arizona	Jan.	145.9	0.2	2.5	NA	NA
Metropolitan Phoenix	Jan.	150.7	0.2	2.6	NA	NA
Metropolitan Tucson	Jan.	141.1	0.1	2.5	NA	NA
Non-urban Arizona	Jan.	133.4	0.4	2.8	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	1st Qtr.	123.7	1.0	5.4	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Feb.	118.3	–0.6	–1.3	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Jan.	232,883	1	27	232,883	27
Pima County	Jan.	33,641	20	27	33,641	27
Balance of State	Jan.	38,556	–54	22	38,556	22
Arizona	Jan.	305,080	–11	27	305,080	27
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Jan.	868	–30	–27	868	–27
Pima County	Jan.	210	2	–10	210	–10
Balance of State	Jan.	566	–10	–29	566	–29
Arizona	Jan.	1,644	–20	–26	1,644	–26
HOME SALES						
Maricopa County - Number	Feb.	3,360	–10	–11	7,110	0
Maricopa County - Median Price	Feb.	79,150	–3.8	–1.1	80,800	0.7
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	4th Qtr.	91	1.1	11.0	NA	NA
Metropolitan Phoenix - Resale Homes	4th Qtr.	123	3.4	8.8	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	March	11.1	3.7	12.1	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	4th Qtr.	2,037	0.6	2.2	NA	NA
Arizona	4th Qtr.	3,534	0.8	2.2	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Feb.	3,015	–16.1	4.1	6,611	6.1

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University.

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GSP growth holds at 2 percent in 1988

The Arizona Gross State Product (GSP) expanded only 1.9 percent in 1988, hardly different from the 2.1 percent advance during 1987. In each of the last two years, Arizona's economic growth was substantially less than the national average (see Table 1, page 2). In contrast, the long-term annual average increase in the GSP is 5.6 percent, double the national average.

In the middle 1980s, the adjusted GSP, which excludes the contributions of the volatile mining and agriculture industries, rose more rapidly than overall GSP. Little difference existed between the two measures in 1987 and 1988.

The quarterly pattern of GSP growth has been erratic (see Table 2, page 2). The year-over-year percent change, however, had deteriorated by the end of 1988 to the weakest figure since the 1982 recession. Other than a modest improvement in first quarter 1988 figures, revised data was little different from that previously reported.

SECTORAL GROWTH AND SHARES

Before inflation adjustment, GSP totaled $59.7 billion in 1988. The services industry became the largest in the state, surpassing the struggling FIRE (finance, insurance and real estate) sector. Other major industries are trade and manufacturing (see Figure I, page 2). These four industries account for more than two-thirds of the state's economic activity.

For the second consecutive year, the fastest growing industries (after inflation adjustment) were TCPU (transportation, communications and public utilities) and manufacturing. Services is the only other industry to have grown in each year. Construction was the major drag on the economy in 1987, but FIRE experienced the weakest conditions in 1988.

Growth rates by industry in some cases were considerably different when measured by employment instead of GSP (see Figure II, page 3). In mining and government, employment rose at a relatively strong pace, but gross product declined. In contrast, employment gains in manufacturing and TCPU were not nearly as strong as the GSP advances.

This marks a continuation of very strong gains in output per employee in the manufacturing sector. Between 1985 and 1988, manufacturing's gross product increased 20 percent, but employment rose less than 5 percent. Despite a generally healthy industry, manufacturing is contributing to the state's economic problems by creating so few jobs.

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DEFLATORS

Measured by the gross product implicit price deflator, inflation in Arizona has been slightly greater than the national rate since 1986. Other than the mining industry, where soaring copper prices drove the deflator much higher for the second consecutive year, the highest inflation rates remained in the service industries: FIRE, government and services.

PER CAPITA GSP

On a per person basis, GSP before inflation adjustment amounted to $17,068. On a real basis, this figure declined for the second consecutive year. Per capita GSP remained well below per person GNP.

COMPARISON TO OTHER MEASURES

The annual average GSP increase of 1.9 percent was nearly identical to the increase in wage and salary employment. The year-over-year percent change decelerated during the course of 1988 for both measures, with the year-end annual increases nearly identical at approximately 1 percent. On the employment measure, this performance placed Arizona among the slowest-growth states in the nation.

The weak and slowing performance of the Arizona economy measured by GSP was also seen in the coincident economic index for the state. The latter, however, measured substantial growth in the fourth quarter while the GSP measure was flat. The coincident index's improvement largely resulted from a sharp decline in the unemployment rate.

OUTLOOK

After two consecutive subpar years in 1987 and 1988 in which its economic

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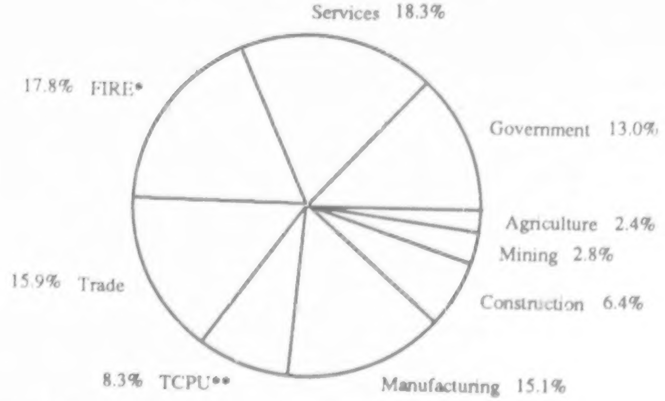
growth failed to come close to matching the national rate, Arizona's economy entered 1989 at its lowest year-over-year growth rate yet this cycle. Thus, even if modest improvement in economic conditions occurs during the course of 1989, annual average growth is unlikely to be much different than in 1987 or 1988.

While the problems afflicting the Arizona economy clearly are cyclical, current conditions do not reflect those of a typical economic cycle. Rather, the current down cycle is closely following that of the early-to-mid-1960s, in which five poor years occurred consecutively. That episode was primarily precipitated by overbuilding, as was the current cycle.

With vacancy rates in most commercial sectors still rising, a recovery in the construction industry probably is years away. The manufacturing industry shows no sign of performing better than it has in recent

FIGURE I

ARIZONA GROSS STATE PRODUCT
1988 Sectoral Shares, Current Dollars



*Finance, Insurance, and Real Estate
**Transportation, Communications, and Public Utilities

Source: Center for Business Research, College of Business, Arizona State University.

TABLE 1

ANNUAL ECONOMIC GROWTH

	Arizona Gross State Product				Gross National Product
Annual	*Billions of Current Dollars*	*Billions of 1982 Dollars*	*Percent Change, 1982 Dollars*	*Percent Change, Adjusted GSP**	*Percent Change, 1982 Dollars*
1982	34.266	34.260	-3.2	-1.9	-2.5
1983	37.789	36.270	5.9	8.0	3.6
1984	43.206	40.283	11.1	11.3	6.8
1985[r]	48.126	43.505	8.0	9.1	3.4
1986[r]	52.604	45.923	5.6	6.7	2.8
1987[r]	56.251	46.905	2.1	2.2	3.4
1988	59.687	47.795	1.9	2.1	3.9

TABLE 2

QUARTERLY REAL ECONOMIC GROWTH

	Quarterly Percent Change			Percent Change from Same Quarter, Prior Year		
	GSP[r]	*Adjusted GSP[r]**	*GNP*	*GSP[r]*	*Adjusted GSP[r]**	*GNP*
First Quarter 1987	-0.6	-1.6	1.1	1.1	1.3	1.5
Second Quarter 1987	1.4	1.6	1.2	2.5	2.0	3.0
Third Quarter 1987	0.8	1.0	1.1	2.4	2.6	3.9
Fourth Quarter 1987	1.0	1.9	1.5	2.6	2.9	5.0
First Quarter 1988	-0.5	-1.1	0.8	2.6	3.4	4.8
Second Quarter 1988	1.0	0.3	0.7	2.3	2.1	4.2
Third Quarter 1988	0.4	0.9	0.6	1.9	2.0	3.7
Fourth Quarter 1988	-0.0	1.0	0.6	0.9	1.0	2.8

*The adjusted GSP is the GSP in billions of 1982 dollars, minus the contributions of the agriculture and mining industries.

[r] Revised.

Source (Tables 1 and 2): Center for Business Research, College of Business, Arizona State University. GNP data are from the U.S. Department of Commerce, Bureau of Economic Analysis.

years. Thus, the main goods-producing industries are unlikely to provide any boost to the Arizona economy during the rest of 1989 or 1990.

Other industries also are unlikely to experience improved conditions in 1989-90. Finance and real estate will continue to struggle, with a good chance that conditions will become worse before they improve. Tourism will have another good, but not better, year.

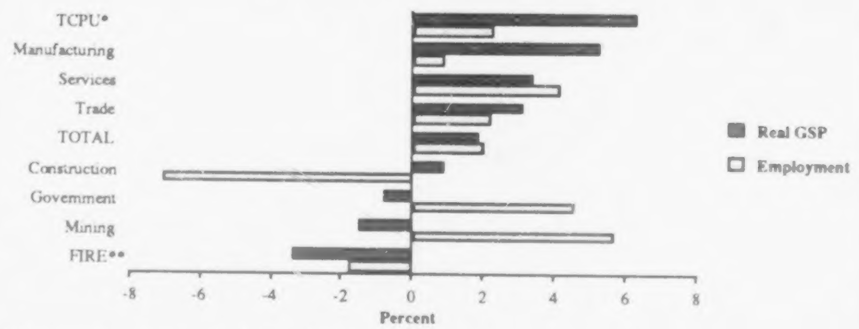
As a result of this sectoral review, it is difficult to be optimistic about overall economic growth. Short of a massive infusion of new firms from out of state — a highly unlikely occurrence — much improvement in economic performance is doubtful. GSP probably will rise approximately 2 percent again in 1989, though a chance of slower growth exists. Assuming that national economic conditions do not deteriorate too much, 1990 may be slightly better. Should a national recession develop, however, GSP growth likely will slide to zero — or become negative.

In the 1960s cycle, national economic conditions remained strong throughout, as did growth in Arizona's manufacturing industry. Under these conditions, it took five years for overall economic conditions to improve appreciably. Thus, it probably is optimistic to assume that Arizona's economy will improve significantly before 1992. A national recession would push the onset of the next strong expansion back another year.

– Tom R. Rex
Research Manager

FIGURE II

1988 GROWTH RATES BY SECTOR



*Transportation, Communications, and Public Utilities
**Finance, Insurance, and Real Estate

Source: Center for Business Research, College of Business, Arizona State University. Employment data from Arizona Department of Economic Security.

Net migration remains low during first quarter

Net in-migration to the Phoenix metropolitan area was approximately 5,000 in first quarter 1989. This inflow was less than that estimated for fourth quarter 1988 (7,000), but slightly more than in the second and third quarters of 1988 (3,000 and 4,000 respectively).

The four-quarter total migration through first quarter 1989 — 19,000 — was the least net in-migration yet this cycle, barely above the worst recorded in the 1981-82 recession. The lowest four-quarter inflow since the late 1960s was 14,000 in 1975-76 (see Figure 1).

Combined with net natural increase, the population change during first quarter 1989 was approximately 11,000, raising the Maricopa County population to 2,048,000, up 41,000 from first quarter 1988. Statewide, the population was approximately 3,550,000, up from 3,481,000 at the end of first quarter 1988 and 3,534,000 at year-end 1988.

OUTLOOK

The quarterly pattern of net inflows raises the question whether the fourth quarter's figure was an aberration on the high side, rather than the middle two quarters of 1988 being an abnormality on the low end.

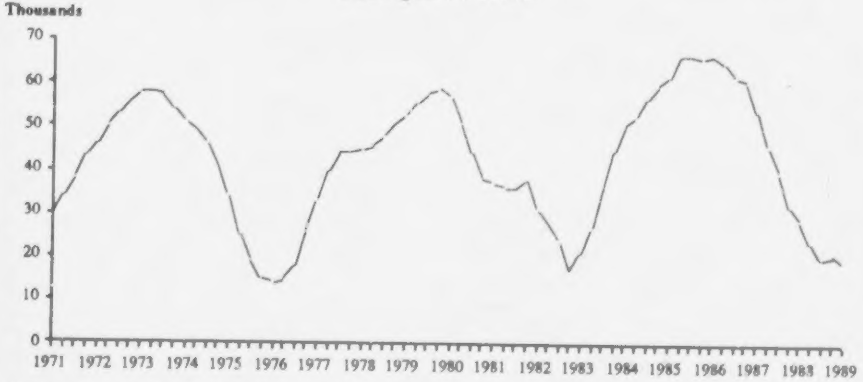
Employment gains, which lead migration flows by several months on average, have continued sluggish. The Arizona Index of Leading Economic Indicators has shown considerable weakness over the last few months, suggesting that job creation will remain poor, if not worsen, during the next few months.

A number of factors that come to light in April will have negative impacts on employment gains and population inflows: higher interest rates, rising vacancy rates and weak absorption in many commercial/industrial sectors, and intensifying problems at various local financial institutions. Thus, improvement in the migration flows seems less likely than previously predicted.

– Tom R. Rex
Research Manager

FIGURE I

NET MIGRATION TO MARICOPA COUNTY
Four-Quarter Totals



Source: Center for Business Research, College of Business, Arizona State University.

First quarter 1989 housing affordability is strong

Subpar economic conditions and a weak real estate market are providing good opportunities for homebuyers in Metropolitan Phoenix in terms of both availability and affordability. Despite higher mortgage interest rates during first quarter 1989, affordability of resale homes in the Valley rose slightly, due primarily to a decline in the median home price. Metro Phoenix new home affordability fell slightly during the first quarter, but not as much as the decline in national affordability of both new and resale homes. Higher mortgage rates locally and nationally were the primary contributors to the reduced affordability.

The Metro Phoenix resale home affordability index improved slightly from 123 to 124 during first quarter 1989, rising to its second-highest level yet (see Table 1). The new home index fell from 91 to 88, returning new home affordability to the level of first quarter 1988.

Both new and resale homes were considerably less affordable nationally; the national index declined further than the Valley's index (see Figure I). National resale home affordability fell from 108 to 100, the lowest level since fourth quarter 1985 (see Table 2). Affordability of new homes dropped from 82 to 77, matching fourth quarter 1987 — its lowest point since first quarter 1985.

An index of 100 or more indicates that a median-income household is able to qualify for a median-priced home, assuming a 15 percent downpayment on a fixed-rate, conventional, 30-year mortgage and an income qualification factor of 28 percent. As the index level rises, affordability improves; for example, an increase in the index from 80 to 90 means affordability has improved, although a median-income household still cannot afford a median-priced home.

During first quarter 1989, a median-income household in the Metro Phoenix area could afford a $92,988 home — more than the $75,000 median-priced resale home, but less than the $105,625 median-priced new home. The median-income household nationally could afford a $91,425 home, less than both the $91,740 median- priced resale home and the $119,000 median-priced new home.

COMPONENT CHANGES

Throughout the 1980s, variations in mortgage interest rates have had greater impact on housing affordability than have fluctuations in either home prices or household incomes. During first quarter 1989, the effective mortgage rate (contract rate plus fees and charges, or "points") in the Phoenix area rose to 11.4 percent from 10.8 percent during the prior quarter, causing affordability to drop. The local effective mortgage rate was higher during first quarter 1989 than at any time since fourth quarter 1985 (see Figure II).

National mortgage rates rose from 10.8 percent during the prior quarter to 11.3 percent during first quarter 1989. Until 1988, local rates were typically slightly below national rates; local rates have been equal to or slightly above national rates for the past year.

Even though mortgage rates have the greatest impact on affordability levels, changes in home prices have had a larger-than-normal role recently. Except during the 1982 recession, the median price of homes in Metro Phoenix increased steadily until 1988, when prices remained flat or fell from 1987 levels. The median price of Valley resale homes fell to $75,000 during first quarter 1989 from $78,000 the prior quarter, indicating that the weak local housing market may now be showing up in lower prices as well as slow sales. The median price of new homes in the Valley remained almost level, rising from $105,550 to $105,625. New home prices have not increased significantly since fourth quarter 1987, and the annual first-quarter-over-first-quarter increase is the smallest of the 1980s.

Nationally, prices rose on both new and resale homes; the price of the median resale home increased from $86,950 to $91,750, while new home prices surged from $113,500 to $119,000. The 5.5 percent resale home increase was the largest increase of the 1980s. The 4.8 percent new home price increase was the third highest of this decade.

The median income has been increasing faster than the median home price in the Phoenix area since 1988, further improving local affordability. The median gross household income in the Valley was estimated to be $33,110 during the first quarter, slightly higher than the national estimated median of $32,250. Locally, the median income has been rising slightly

TABLE 1

HOUSING AFFORDABILITY INDEXES
Metropolitan Phoenix; Single-family Only

	Resale Homes					New Homes		
Quarter	*Median Gross Monthly Income*	*Effective Interest Rate*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*
1st 1987	$2,920	9.4%	$75,000	$630	131	$96,520	$810	101
2nd 1987	2,970	10.6	78,000	720	116	95,310	880	95
3rd 1987	3,010	10.8	79,500	750	113	101,000	950	89
4th 1987	3,060	11.3	77,475	760	113	106,600	1,040	82
1st 1988	3,100	10.7	77,000	720	121	105,560	980	88
2nd 1988	3,140	10.8	77,600	730	120	100,540	940	93
3rd 1988	3,170	10.9	79,000	740	119	104,400	980	90
4th 1988	3,210	10.8	78,000	730	123	105,550	990	91
1st 1989	3,260	11.4	75,000	740	124	105,625	1,040	88

Source: Arizona Real Estate Center, College of Business, Arizona State University. Interest rates are from the Federal Home Loan Bank Board *News.*

faster than the national median since 1986, and home prices have been rising faster than incomes nationally, further widening the spread between local and national affordability.

OUTLOOK

Mortgage rates should continue to exert the greatest influence on housing affordability, although home prices may play a larger and more uncertain role than in the past. Mortgage rates will likely remain near the current levels during the next quarter as the Fed attempts to bring the national economy to a "soft landing" by keeping interest rates relatively high in order to slow the economy, without allowing the country to enter a recession. The jury is still out as to how successful their approach will be, but current indications are that a soft landing may be possible, at least in the short term.

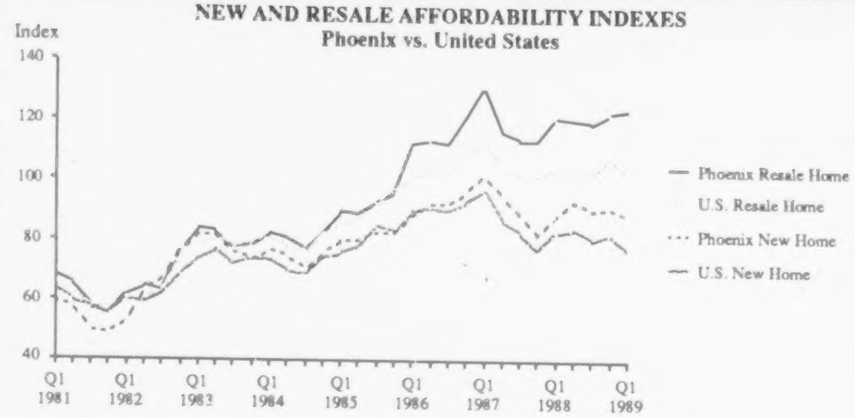
The median household income should also increase slightly, though it may fall somewhat short of inflation. However, the increase may not be as large as in a typical year and many households may face more uncertainty than usual, due to the many firms laying off employees, going out of business, and facing foreclosure.

Unless mortgage rates rise unexpectedly, housing affordability should remain at the current high levels for the next few months, possibly improving even more if home prices fall further. Homebuyers should continue to benefit from higher availability of homes and strong affordability levels in the near future.

– Sharla Kivett, *Research Analyst*
Arizona Real Estate Center

FIGURE I

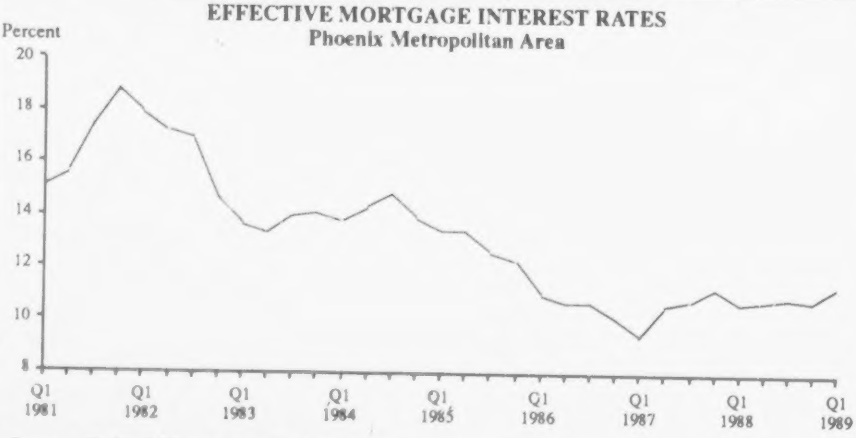
NEW AND RESALE AFFORDABILITY INDEXES
Phoenix vs. United States



Source: Arizona Real Estate Center, College of Business, Arizona State University.

FIGURE II

EFFECTIVE MORTGAGE INTEREST RATES
Phoenix Metropolitan Area



Source: Federal Home Loan Bank Board *News.*

TABLE 2

HOUSING AFFORDABILITY INDEXES
United States; Single-family Only

	Resale Homes					New Homes		
Quarter	*Median Gross Monthly Income*	*Effective Interest Rate*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*
1st 1987	$2,870	9.6%	$84,300	$720	112	$97,900	$830	97
2nd 1987	2,910	10.4	86,000	780	104	103,400	940	87
3rd 1987	2,950	10.9	86,800	820	101	106,000	1,000	83
4th 1987	2,990	11.3	85,000	830	101	111,500	1,080	77
1st 1988	3,020	10.6	88,150	810	104	110,000	1,010	83
2nd 1988	3,060	10.7	88,850	820	104	110,000	1,020	84
3rd 1988	3,100	10.9	90,175	850	102	115,000	1,080	80
4th 1988	3,130	10.8	86,950	810	108	113,500	1,060	82
1st 1989	3,170	11.3	91,750	890	100	119,000	1,160	77

Source: Arizona Real Estate Center, College of Business, Arizona State University. Interest rates are from the Federal Home Loan Bank Board *News.*

Coincident index growth diverged in February

Economic growth rates varied considerably across Arizona in February. In the Phoenix area, the economy expanded modestly for the second consecutive month. The situation was much different in the Tucson area, where a sharp drop in February followed a slim gain in January. In non-urban Arizona, a small decline in February followed a moderate increase in January. Since late 1987, the Tucson area has led the rest of the state through swings in economic performance; the Phoenix area has lagged in these variations (see Figure I).

In February, the coincident economic index for the Phoenix area rose 0.3 percent to 151.4, up from a revised 150.9 in January (1982=100). The Tucson area's decline in February was 0.8 percent, dropping its index to 140.0. Rural Arizona's coincident index fell 0.2 percent to 133.1.

The unemployment rate rose in each area of the state in February, but results of the other components were mixed. A relatively large number of new jobs were created in Maricopa County, but employment gains were slight in rural Arizona and negative in the Tucson area.

The value of commercial building permits rose, offsetting some of January's big loss in the Phoenix area, but the value declined elsewhere, especially in the Tucson area. Retail sales barely changed from month-earlier values.

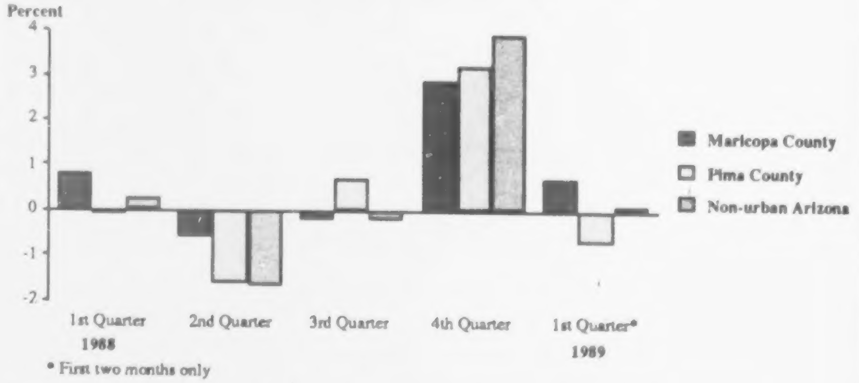
The composite index for the state edged up 0.1 percent to 146.1 — 2.7 percent higher than in February 1988. The annual increase in Maricopa County and non-urban Arizona also was in the 2.5 to 3 percent range, but the annual rate slipped to 1.5 percent in Pima County.

Preliminary data for March indicate that another modest gain likely occurred in Maricopa County. Growth in the rest of the state probably was moderate, an improvement over the January-February performance.

– **Tom R. Rex**
Research Manager

FIGURE I

COINCIDENT ECONOMIC INDEXES
Quarterly Percent Change



* First two months only

Source: Center for Business Research, College of Business, Arizona State University.

Purchasing indicators gain strength in April

The Arizona economy showed surprising strength in April for the second month in a row. All indicators except employment increased; new orders received and production enjoyed their largest monthly increases in 12 and 6 months, respectively. Employment registered "no growth" for the second month in a row, reflecting a "wait and see" attitude on the part of Arizona employers. Since net employment declines were reported in the four months between November 1988 and February 1989, this bottoming out is encouraging. The inflation rate continued to hold steady.

It now appears that the low spot in the current economic growth curve occurred in January and February, and that the economic trend began to tilt upward in March and gained additional strength in April. While a robust rebound will not occur until interest rates begin to decline, a further, modest step-up in the growth rate should occur in the latter half of the year.

– **Harold Fearon**

TABLE 1

APRIL PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (April compared to March)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	50	48	2
Delivery time from vendors	31	64	5
Purchased materials inventory level	33	38	29
New orders received	41	38	21
Production	36	43	21
Employment	22	56	22
Purchases	44	30	26

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona leading index regains ground lost in February

The Arizona Index of Leading Economic Indicators increased in March to 119.0. The March number was 0.59 percent higher than the 118.3 number for February 1989 and equal to the number for January 1989 (1982 = 100).

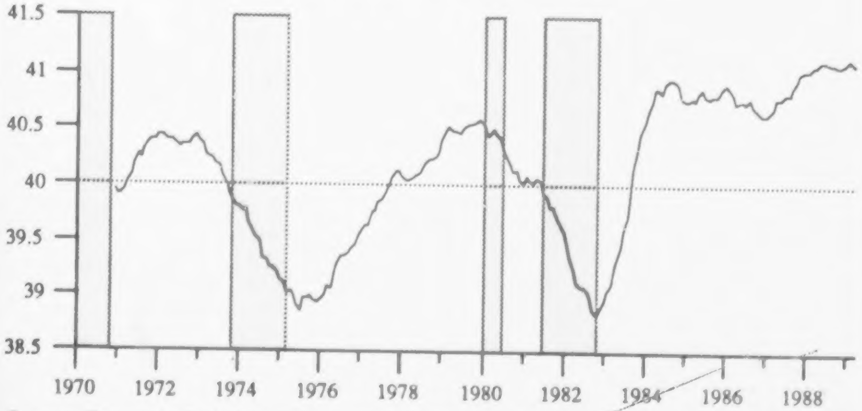
Residential building permits, sensitive prices, new orders, delivery times, production and employment had a positive impact. Manufacturing hours worked, inventories and the money supply were negative influences.

ANALYSIS

Seasonally adjusted hours worked in manufacturing is probably the least talked about component of the leading index. Manufacturers' first reaction to a change in demand is often to adjust the number of hours worked by current employees rather than to adjust the size of the staff. Thus, changes in hours worked by manufacturing employees often lead changes in production and the employment level.

FIGURE I

MANUFACTURING HOURS WORKED PER WEEK
12-Month Moving Average



Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

TABLE 1

NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution⁺			
	Dec.	*Jan.*	*Feb.*	*Mar.*
Delivery Time*	.02	–.01	–.02	.09
Inventory Levels*	–.09	.11	.02	–.09
New Orders*	–.05	–.04	–.07	.12
Production*	–.06	–.14	–.09	.09
Employment*	–.03	–.03	–.06	.08
Residential Building Permits	.09	–.09	–.36	.32
Average Workweek, Manufacturing	.00	–.10	.07	–.10
Money Supply	.00	–.34	–.13	–.07
Change in Sensitive Materials Prices	.00	.04	.09	.16
OVERALL INDEX CHANGE (%)	–.11	–.61	–.56	.59

⁺The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the Purchasing Management Associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

Hours worked in manufacturing is estimated from a monthly sampling of employers conducted by the Arizona Department of Economic Security in cooperation with the U.S. Bureau of Labor Statistics. A 12-month moving average was used in Figure I to smooth the series for graphing purposes. However, the moving average obscures the fact that hours worked in manufacturing does lead the economy. The bands on the graph represent recessionary periods for Arizona, calculated by the Center for Business Research from gross state product data and other indicators.

The graph clearly shows that, except for the very short recession of 1980, hours worked in manufacturing were at or below 40 hours per week when the recession started. Hours worked have been on an upward path since the end of the last recession in 1982. Employment growth has been below 2 percent for the last three years, while hours worked has continued to rise, suggesting that since Arizona is in a slow growth period, employers are being quite cautious about expanding capacity. There is no evidence yet of the sharp drop in hours worked that precedes most recessions.

OUTLOOK

The drop in the money supply slowed significantly in March — a trend which may continue as the Federal Reserve reacts to indications that the national economy is slowing. Residential building permits remain on an erratic course that is likely to continue for a while. The index suggests that the Arizona economy will stay on the slow growth path for the time being.

– **Tracy L. Clark,** *Economist*
Economic Outlook Center

The Arizona leading index is based on 9 economic indicators, combined and weighted to project the pace of economic activity several months ahead. Five of the components come from a monthly survey of Arizona purchasing managers conducted by Dr. Harold Fearon. The Arizona Index of Leading Economic Indicators is sponsored by Citibank (Arizona).

ARIZONA ECONOMIC INDICATORS

					Year-to-Date	
	Month or Quarter	*Value*	*Percent Change from Previous Period*	*Percent Change from Year Ago*	*Value*	*Percent Change from Year Ago*
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	4th Qtr.	61.103	1.7	5.0	NA	NA
Arizona - 1982 Dollars	4th Qtr.	48.005	0.0	0.9	NA	NA
COINCIDENT ECONOMIC INDEXES (1982 = 100)						
Arizona	Feb.	146.1	0.1	2.7	NA	NA
Metropolitan Phoenix	Feb.	151.4	0.3	3.0	NA	NA
Metropolitan Tucson	Feb.	140.0	–0.8	1.5	NA	NA
Non-urban Arizona	Feb.	133.1	–0.2	2.7	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	1st Qtr.	123.7	1.0	5.4	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1982 = 100)						
Arizona	March	119.0	0.6	–1.1	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Feb.	217,999	–6	–10	450,882	6
Pima County	Feb.	22,834	–32	–44	56,475	–16
Balance of State	Feb.	42,445	10	–9	81,001	3
Arizona	Feb.	283,278	–7	–14	588,358	3
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Feb.	1,175	35	–10	2,043	–18
Pima County	Feb.	155	–26	–69	365	–50
Balance of State	Feb.	912	61	24	1,478	–3
Arizona	Feb.	2,242	36	–12	3,886	–18
HOME SALES						
Maricopa County - Number	March	3,320	–1	2	10,430	0
Maricopa County - Median Price	March	78,250	–1.1	–0.9	80,000	0.0
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	1st Qtr.	88	–3.3	0.0	NA	NA
Metropolitan Phoenix - Resale Homes	1st Qtr.	124	0.8	2.4	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	April	11.0	–0.9	7.8	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	1st Qtr.	2,048	0.5	2.0	NA	NA
Arizona	1st Qtr.	3,550	0.5	2.0	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	March	3,229	7.1	3.8	9,840	5.3

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University.

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Arizona forecast offers little prospect of change

Quarterly Economic Forecast

Signals from the national economic indicators show the economy is slowing down after a very strong performance in 1988. Both real output growth and job creation are below a year ago. This cooling-off is undoubtedly pleasing the Federal Reserve authorities who have been watching the inflation gauge while gently applying the brakes in hopes of achieving a "soft landing" without recession.

First quarter figures for Arizona show that the economy remains mired in a pattern of very slow but positive expansion. For the first quarter, Arizona ranks 48th among all states in the rate of increase of nonfarm employment. Surprisingly, the non-metropolitan areas of the state seem to be growing somewhat faster than the urban areas.

THE NATIONAL SCENE

Preliminary figures (subject to later revision) show that gross national product expanded in the first quarter at an annual rate of 4.3 percent after adjustment for inflation. Analysts are quick to point out that 2.5 percentage points of the gain represent a comeback in agricultural output from the low levels caused by last year's drought. The underlying growth rate is actually estimated at an annualized rate of 1.8 percent.

GNP inflation-adjusted growth rates have been lower each quarter since peaking at 6.1 percent in the fourth quarter of 1987. Growth rates in the following four quarters were 3.4 percent, 3.0 percent, 2.5 percent, and 2.4 percent.

While some observers believe the 1.8 percent growth rate for the first quarter of 1989 is right in line with soft landing targets, others still fear that the Federal Reserve's hold on the reins of the economy is excessively tight and imposes the risk of a recession within the next 18 months.

In a survey of more than 50 economists reported in *Blue Chip Economic Indicators* (May 10, 1989), slightly more than two-thirds believed a recession would occur before 1992. Nearly half of those polled felt that a recession would take place in 1990.

THE NATIONAL OUTLOOK

National job growth figures for May show that only 101,000 more workers were on payrolls that month, following a gain of 206,000 in April. Employment is growing more slowly now than at any time in the past three years.

With such clear evidence that the economy is indeed slowing, it is now possible that interest rates will continue the downward movement which began in March of this year. In addition, the recent rise in the international exchange value of the dollar provides one more incentive for the Fed to ease credit conditions somewhat.

The national forecast of the Economic Outlook Center (EOC) this month is based on the critical assumption that the soft landing (slow growth without recession) strategy is successfully implemented by Federal Reserve officials during the next two quarters. Interest rates may vary around a trend line sloped gently downward.

In the EOC outlook, inflation-adjusted gross product grows 2.4 percent in 1989 and 2.0 percent in 1990 (Table 1, page 2). The economy's strength continues to come from exports and business expenditures on capital equipment. Consumption expands moderately and government spending is sluggish.

The current year will not be particularly strong nationally for housing starts, which will be lower than in 1988. A modest rebound is expected in 1990 due to lower mortgage rates.

THE WESTERN STATES

With final revised employment data now available for the states of the Western region, it is evident that many of Arizona's competitors for businesses and population are creating jobs at well above the national average pace of 3.6 percent in 1988.

Nevada led the West and the nation in job growth last year. The expansion is driven by the Las Vegas area, which accounted for 65 percent of job growth during the year. Many Arizona-based con-

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struction firms are expanding their presence in Nevada, where housing permits increased by more than 85 percent in 1988.

Washington and Oregon, along with California, are enjoying the benefits of vigorous trade with the Pacific Rim area. Portland, for example, has been designated the entry point for Hyundai automobiles, and expects to receive 250,000 units per year by 1992.

The Washington economy is sparked by the worldwide demand for aircraft produced at the Boeing company. With over three years of orders backlogged, the giant employer continues to hire workers and recently "imported" a large number of Lockheed employees from California to meet production deadlines.

With a rate of expansion of nonfarm employment of 1.8 percent last year, Arizona's economy performed below that of every Western state except Colorado.

THE ARIZONA ECONOMY

Data for first quarter 1989 economic activity in Arizona held no surprises. Job creation in nonfarm businesses was proceeding at a 1 percent annual rate, similar to the fourth quarter of last year. While this represents no improvement, it is not a deterioration. It is, however, far off the pace of 8.2 percent recorded in 1985, and below the annual average for 1988.

Net migration was positive during the

TABLE 1

1989 AND 1990 ECONOMIC FORECASTS: UNITED STATES

	Actual *1985*	Actual *1986*	Actual *1987*	Estimated *1988*	Forecast *1989*	Forecast *1990*
Gross National Product						
Billions of 1982 Dollars	3,618.7	3,721.7	3,847.0	3,996.0	4,091.0	4,173.0
Percent Change	3.4	2.8	3.4	3.9	2.4	2.0
Industrial Production (Percent Change)	1.9	1.1	3.9	5.7	3.0	1.5
Net Exports (Billions of 1982 Dollars)	–104.2	–137.5	–128.9	–99.7	–91.2	–70.5
Housing Starts						
Number in Millions	1.74	1.81	1.63	1.49	1.46	1.50
Percent Change	1.7	4.0	–9.9	–8.6	–2.0	2.7
Unemployment Rate (Percent)	7.2	7.0	6.2	5.5	5.4	5.7
Consumer Price Index (Percent Change)	3.5	1.9	3.7	4.1	4.6	4.7
Three-Month Treasury Bill Rate (Percent)	7.5	6.0	5.8	6.7	8.3	8.0
Aaa Corporate Bond Rate (Percent)	11.4	9.0	9.4	9.7	10.3	10.0

TABLE 2

1989 AND 1990 ECONOMIC FORECASTS: ARIZONA

	Actual *1985*	Actual *1986*	Actual *1987*	Estimated *1988*	Forecast *1989*	Forecast *1990*
Gross State Product						
Millions of 1982 Dollars	43,505	45,923	46,905	47,795	48,846	50,360
Percent Change	6.1	5.6	2.1	1.9	2.2	3.1
Personal Income						
Millions of Current Dollars	40,955	44,856	48,466	51,593	54,998	58,958
Percent Change	11.3	9.5	8.0	6.5	6.6	7.2
Retail Sales						
Millions of Current Dollars	16,169	17,187	18,001	18,855	19,798	20,867
Percent Change	9.7	6.3	4.7	4.7	5.0	5.4
Unemployment Rate (Percent)	6.5	6.9	6.3	6.3	6.8	6.5
Wage and Salary Employment						
Number in Thousands	1,278.6	1,337.8	1,385.8	1,410.6	1,435.2	1,470.9
Percent Change	8.2	4.6	3.6	1.8	1.7	2.5
Population						
Number in Thousands	3,205	3,330	3,430	3,507	3,584	3,670
Percent Change	4.0	3.9	3.0	2.2	2.2	2.4
Single-Family Units Permitted						
Number	33,271	34,079	27,360	22,791	19,828	21,771
Percent Change	7.8	2.4	–19.7	–16.7	–13.0	9.8
Multifamily Units Permitted*						
Number	37,312	27,008	12,038	8,853	7,233	7,660
Percent Change	–22.0	–27.6	–55.4	–26.5	–18.3	5.9

*Apartment complexes of three or more units

Source (Tables 1 and 2): Economic Outlook Center, College of Business, Arizona State University.

first quarter but, at 7,000 persons, was lower than the 11,000 posted in the previous quarter. With job opportunities plentiful in the neighboring states of Nevada and California, Arizona can neither attract residents away from those states in large numbers nor hold those Arizonans who are contemplating leaving here.

Nevertheless, even net migration at the current slow pace combined with natural increase would give Arizona a population gain about double the national rate of increase and greater than that projected for any Western state except California and Nevada.

As the national economy winds down, Arizona's slow but steady growth is beginning to look slightly better compared to just a few months ago. For example, in January of this year, Arizona ranked 49th among all states in the rate of employment gains, with an increase of 1 percent. By March, Arizona had moved up to 42nd among the states. Although still posting a meager employment growth rate (1.1 percent), the Grand Canyon State bettered a number of states in job gains, including the "miracle" state of the presidential campaign, Massachusetts, where growth has slipped to 1 percent.

The major uncertainty for Arizona watchers is the timing and magnitude of moves by financial institutions to market

TABLE 3

ARIZONA EMPLOYMENT FORECASTS
For 1989-1990 (thousands)

	1985	Percent Change	1986	Percent Change	1987	Percent Change	1988	Percent Change	1989	Percent Change	1990	Percent Change
Manufacturing	181.5	5.1	184.6	1.7	187.4	1.5	189.9	1.3	192.0	1.1	195.3	1.7
Mining	11.8	–9.2	11.0	–7.6	11.4	3.6	12.0	5.3	12.6	5.0	13.0	3.2
Construction	111.5	15.6	113.0	1.3	102.4	–9.4	93.9	–9.0	88.3	–6.0	88.7	0.5
TCPU*	62.9	5.2	65.8	4.6	71.8	9.3	72.7	1.4	73.9	1.6	75.2	1.8
Trade	311.4	8.7	326.3	4.8	340.4	4.3	347.5	2.1	356.2	2.5	365.1	2.5
FIRE**	81.0	12.3	86.7	7.0	92.1	6.2	93.3	–1.3	90.4	–3.1	90.7	0.3
Services	299.9	9.7	325.1	8.4	345.3	6.2	361.2	4.6	374.6	3.7	388.5	3.7
Government	218.0	5.1	224.1	2.8	231.9	3.5	240.3	3.6	247.3	2.9	254.7	3.0
Total Wage and Salary Employment	1,278.6	8.2	1,337.8	4.6	1,385.8	3.6	1,410.6	1.8	1,434.6	1.7	1,469.0	2.4
Total Employment	1,381.0	0.8	1,461.0	5.8	1,510.7	3.4	1,550.0	2.6	1,588.8	2.5	1,644.4	3.5
Total Unemployment	96.0	35.2	109.0	13.5	101.0	–7.3	104.0	3.0	109.9	5.7	113.5	3.3
Labor Force	1,477.0	2.5	1,569.6	6.3	1,612.0	2.7	1,654.0	2.6	1,698.7	2.7	1,758.2	3.5
Unemployment Rate		6.5		6.9		6.3		6.3		6.8		6.5

*Transportation, Communications and Public Utilities

**Finance, Insurance and Real Estate

TABLE 4

1989 AND 1990 ECONOMIC FORECASTS: MARICOPA COUNTY

	Actual *1985*	Actual *1986*	Actual *1987*	Estimated *1988*	Forecast *1989*	Forecast *1990*
Consumer Price Index						
Percent Change	5.0	1.4	4.1	4.1	5.0	5.1
Retail Sales						
Millions of Current Dollars	10,829	11,342	11,743	12,223	12,846	13,527
Percent Change	11.2	4.7	3.5	4.1	5.1	5.4
Unemployment Rate (Percent)	5.1	5.6	5.2	5.1	5.5	5.3
Wage and Salary Employment						
Number in Thousands	842.4	882.6	913.8	931.3	948.1	970.9
Percent Change	9.1	4.8	3.5	2.0	1.8	2.4
Population						
Number in Thousands	1,826	1,910	1,976	2,021	2,066	2,120
Percent Change	5.6	4.6	3.4	2.3	2.2	2.6
Single-Family Units Permitted						
Number	23,143	23,851	18,012	14,734	12,875	14,214
Percent Change	11.4	3.1	–24.5	–18.2	–12.6	10.4
Multifamily Units Permitted*						
Number	27,271	18,311	9,106	6,160	5,058	5,356
Percent Change	–25.9	–32.9	–50.3	–32.4	–17.9	5.9

*Apartment complexes of three or more units

Source (Tables 3 and 4): Economic Outlook Center, College of Business, Arizona State University.

properties held as a result of foreclosures and repossessions. Many observers feel that until such holdings come onto the market and prices finally stabilize, major external investors will be reluctant to put additional funds into the state economy.

THE ARIZONA OUTLOOK

The EOC forecast for Arizona in 1989 calls for a year that is weaker — but only slightly so — than last year (Table 2, page 2). Wage and salary employment gains in the state may not reach 2 percent. With the first four months of data showing growth of 1.2 percent, the remainder of the year would have to bring about 2.5 percent job growth to average 2 percent for the year as a whole. The EOC forecast is for job growth in 1989 of 1.7 percent.

Population growth for the current year will be 2.2 percent, similar to last year's gain. Retail sales will show little improvement, just about keeping pace with the anticipated rate of inflation.

Consistent with the soft landing hypothesis for the national economy, there is no recession in the forecast for Arizona. Most sectors of the economy will register meager but positive growth. However, residential construction activity will be down from last year. Single-family permits are projected to fall by 13 percent, to a level of 19,828. Multifamily permits will decrease for the fifth consecutive year, with a forecast of 7,233 units.

Nationally, most forecasters are anticipating that 1990 will bring slower growth than the current year. If realized, this may be beneficial for Arizona, as in-migration may be spurred by diminishing job opportunities in other parts of the nation. In addition, the painful decreases in the value of Arizona land and construction inventory are expected to increase the state's cost competitiveness for businesses considering expansion.

The Arizona forecast for 1990 is slightly more optimistic than for 1989. Job creation is projected to grow at 2.5 percent and population will increase at an annual rate of 2.4 percent.

The downward trend in residential construction is expected to reverse in 1990, with single-family permits up 9.8 percent and multifamily permits up by 5.9 percent.

The growth sectors in 1990 are mining (up 3.2 percent), services (up 3.7 percent), and government (up 3.0 percent). The unemployment rate in 1990 will average 6.5 percent, down from an average of 6.8 percent this year (Table 3, page 3).

The Maricopa County forecast follows the same pattern anticipated for the state as a whole (Table 4, page 3). The current year will be slightly weaker than last year, with continuing problems in real estate, finance, and utilities. There will be very modest but positive improvement in 1990.

In brief, the Arizona economy is now at the bottom of a rather long economic trough. Recovery will come not with the sharp upturn Arizonans are accustomed to, but only after a slow process of corrections in real estate and construction. External factors could affect the forecast in a number of ways. A slowing national economy could increase migration to the state. On the other hand, a national recession would cripple an already weakened economy and delay recovery.

–**Lee R. McPheters,** *Director*
Economic Outlook Center

Arizona leading index dips slightly in April

The Arizona Index of Leading Economic Indicators decreased in April to 118.6, according to the Economic Outlook Center in the College of Business, Arizona State University. The April number was 0.4 percent lower than the revised 119.1 number for March 1989 and 1.3 percent below the April 1988 number of 120.2 (1982 = 100).

Money supply, residential building permits, manufacturing hours worked, delivery times, sensitive prices and employment had a negative impact. New orders, inventories and production were positive influences.

OUTLOOK

The major negative influence this month was the money supply. The Federal Reserve has been constricting the money supply in order to head off inflation but the signs of slowing in the national economy may lead to a change in Federal Reserve policy. The index continues to show no clear pattern in its movements suggesting that there will be little change in the Arizona economy for the time being.

– **Tracy L. Clark,** *Economist*
Economic Outlook Center

TABLE 1

NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution'			
	Jan.	*Feb.*	*Mar.*	*Apr.*
Delivery Time*	–.01	–.02	.09	–.05
Inventory Levels*	.11	.02	–.09	.08
New Orders*	–.04	–.07	.12	.09
Production*	–.14	–.09	.09	.08
Employment*	–.03	–.06	.08	–.05
Residential Building Permits	–.09	–.35	.32	–.15
Average Workweek, Manufacturing	–.10	.03	.00	–.07
Money Supply	–.34	–.13	–.07	–.33
Change in Sensitive Materials Prices	.01	.06	.14	–.05
OVERALL INDEX CHANGE (%)	–.65	–.62	.67	–.44

' The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the Purchasing Management Associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

Arizona construction sags further in first quarter 1989

The Arizona construction industry continued to decline with only $951 million in new projects in first quarter 1989 — the first to dip below $1 billion since third quarter 1983 ($906 million). In contrast, both first and fourth quarters of 1988 reached $1 billion. Some key sectors improved over previous quarters (see Table 2), but most reported less activity.

TABLE 1

REPORTING UNITS WITH GREATEST TOTAL VALUE OF BUILDING PERMITS
First Quarter 1989

Reporting Unit	Value *(in millions)*
Phoenix	$277
Scottsdale	139
Mesa	87
Chandler	47
Unincorporated Maricopa County	43
Tucson	40
Unincorporated Pima County	38
Lake Havasu City	25
Tempe	24
Gilbert	22
Glendale	22
Peoria	19

Source: Arizona Real Estate Center, College of Business, Arizona State University.

With $706 million in permitted activity, Maricopa County continued to represent 74 percent of the state's construction activity. Construction in Pima County declined from $136 million (2,811 permits) a year ago to $88 million (2,503 permits), cutting its share of activity from 14 to 9 percent. Construction in the non-metropolitan counties rose from $151 million to $157 million, increasing their market share from 15 to 17 percent.

More than 80 percent of the state's permitted activity occurred in 12 reporting areas (see Table 1). Three areas reported improvement over a year ago: Phoenix ($249 to $277 million), Scottsdale ($124 to $139 million) and Mesa ($69 to $87 million). Major projects again were the dominant force. Just two permits in Mesa totalled $31 million or 36 percent of the permitted activity. For the first time, a non-metropolitan city made the list: Lake Havasu City ($13 to $25 million).

RESIDENTIAL

Responding to higher interest rates and economic concerns, the single-family sector in Maricopa County reported only 2,953 permits, 22 percent under a year ago (3,783 permits), but 8 percent more than in fourth quarter 1988. A few cities reported improved activity: Gilbert (155 to 224 permits), Glendale (99 to 125 permits) and Peoria (241 to 263 permits).

The number of new single-family homes authorized in Pima County fell from 811 a year ago to only 574 permits for the current quarter. Over 60 percent of the permits were issued in unincorporated Pima County; only 17 percent were in Tucson. Oro Valley remained active with 86 permits, 15 percent of the authorized homes in Pima County.

Single-family activity in the non-metropolitan counties held fairly stable at 1,151 permits, compared to 1,168 a year ago. Strong activity was reported in Lake Havasu City (203 permits), Bullhead City (101 permits) and unincorporated Yavapai County (128 permits).

COMMERCIAL

The apartment sector also fell to its lowest quarterly level during the 1980s. Only 546 units were authorized in Maricopa County, primarily in Phoenix (204 units), Chandler (200 units) and Scottsdale (114 units), in contrast to 629 units a year ago.

Only 39 units were authorized for Pima County compared to 1,037 units a year ago.

TABLE 2

KEY SECTOR CONSTRUCTION ACTIVITY
(First Quarter 1989, Fourth Quarter 1988, and First Quarter 1988)

			COMMERCIAL							
	SINGLE FAMILY		APARTMENTS[a]		OFFICE BUILDINGS[b]		RETAIL STORES[c]		INDUSTRIAL	
	Number of Permits	*Dollar Value (000)*	*Number of Units*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*
Maricopa County										
1st Quarter 1989	2,953	325,668	546	31,666	50	87,475	110	28,522	32	38,102
4th Quarter 1988	2,745	297,475	1,192	71,181	69	84,006	144	50,441	23	10,222
1st Quarter 1988	3,783	353,309	629	29,546	47	25,772	178	70,649	41	16,111
Pima County										
1st Quarter 1989	574	41,279	39	953	14	1,838	25	10,242	5	2,101
4th Quarter 1988	577	40,525	188	3,251	10	2,504	32	7,249	17	1,404
1st Quarter 1988	811	58,068	1,037	32,566	34	3,627	14	4,372	3	601
Rest of Arizona										
1st Quarter 1989	1,151	76,449	179	5,989	17	2,225	65	13,617	17	1,758
4th Quarter 1988	1,061	74,231	241	6,747	21	2,076	51	8,471	19	4,759
1st Quarter 1988	1,168	73,069	79	2,805	31	5,838	68	14,314	11	11,222
Arizona Total										
1st Quarter 1989	4,678	443,396	764	38,608	81	91,538	200	52,381	54	41,961
4th Quarter 1988	4,383	412,231	1,621	81,179	100	88,586	227	66,161	59	16,385
1st Quarter 1988	5,762	484,446	1,745	64,917	112	35,237	260	89,335	55	27,934

[a] Five or more housing units
[b] Office, bank, medical and professional buildings
[c] Shopping centers and other mercantile buildings

Source: Arizona Real Estate Center, College of Business, Arizona State University.

In the rest of Arizona, apartment activity rose from 79 units a year ago to 173 units for the current quarter, led by Lake Havasu City (61 units) and Flagstaff (104 units).

The value of office building permits in Maricopa County improved sharply over a year ago ($26 to $87 million) and is very comparable to the $84 million (69 permits) recorded during fourth quarter 1988. Most of the activity took place in Phoenix ($74 million), Scottsdale ($9 million) and Mesa ($1 million). Tucson accounted for $1.6 million of the $1.8 million recorded in Pima County. No office building permit for more than $1 million was issued in the rest of Arizona.

The retail sector was good throughout the state except in Maricopa County (see Table 1), where it dropped from $71 million a year ago to only $29 million. Retail development was fairly even throughout the county: Phoenix ($12 million), Scottsdale ($5 million), and Glendale ($3 million). Retail development in Pima County improved from $4 million in the first quarter 1988 to the current $10.2 million, $10 million of it in Tucson. In the rest of Arizona, this sector was most active in Payson ($2 million), unincorporated Gila County ($2.4 million) and Bullhead City ($4 million).

The hotel/motel sector also reported a decline in activity from $14 million to $8 million. One permit was issued in Phoenix for $7 million (200 rooms).

INDUSTRIAL AND OTHER

After many quarters of mediocre performance, industrial activity in Maricopa County improved from $16 million a year ago to $38 million. The primary areas of development were Phoenix ($15 million), Chandler ($10 million) and Scottsdale ($8 million). A similar pattern in Pima County shows $2 million in industrial development evenly divided between Tucson and unincorporated Pima County. No other area in Arizona reported industrial activity in excess of $1 million.

Nearly $30 million in new educational facilities—$26 million of it in Maricopa County—led the continuing strong pace of the diverse "other" sector. Mesa led all areas with $18 million followed by Phoenix with $4 million. A single health care facility permit was issued in Lake Havasu City for $7 million.

LOOKING AHEAD

Although Arizona's economy is still growing, it has not been strong enough to absorb the excess space or to stimulate new development. The major projects which are now underway will not open for a few years, when the respective markets should be much improved. Not even the economic expansion which is expected to begin in late 1989 will be able to spark new development until more of the excess space is absorbed.

Although new home construction was lower than a year ago, permitted activity increased throughout the quarter. This sector could begin to show signs of improvement due to declining interest rates. The main threat to this sector is the increasing concern about economic security in the face of mounting layoffs and poor job growth. Consumers who are worried about their economic futures tend to limit major purchases such as new homes. A stronger economic environment must be evident to enhance the confidence of both business and consumers in the future of the state and in their own economic well-being.

Until the economy provides the needed stimulation, there will be two primary construction forces. The first will be the continued authorization of large-scale projects which require long-term construction and create some temporary upswings in permit-

TABLE 3

ARIZONA HOUSING UNITS AUTHORIZED
First Quarter 1989

	One Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total*
APACHE COUNTY	11	8	0	0	0	19
Percent Change, Previous Year	38	33	—	—	—	36
Percent Change, Previous Qtr.	57	-20	—	—	—	12
COCHISE COUNTY	47	98	0	0	0	145
Percent Change, Previous Year	-48	444	—	—	—	34
Percent Change, Previous Qtr.	571	553	—	—	—	559
COCONINO COUNTY	80	45	10	21	104	260
Percent Change, Previous Year	-44	-17	67	600	—	27
Percent Change, Previous Qtr.	-15	-26	25	—	—	60
GILA COUNTY	47	39	2	0	0	88
Percent Change, Previous Year	-22	-20	—	—	—	-41
Percent Change, Previous Qtr.	15	-32	—	—	—	-10
GRAHAM COUNTY	14	52	0	0	0	66
Percent Change, Previous Year	-22	-7	—	—	—	-11
Percent Change, Previous Qtr.	27	16	—	—	—	3
GREENLEE COUNTY	NR	NR	NR	NR	NR	NR
Percent Change, Previous Year	—	—	—	—	—	—
Percent Change, Previous Qtr.	—	—	—	—	—	—
LA PAZ COUNTY	1	20	0	0	0	21
Percent Change, Previous Year	-88	-62	—	—	—	-65
Percent Change, Previous Qtr.	-75	-76	—	—	—	-76
MARICOPA COUNTY	2,953	82	0	11	546	3,592
Percent Change, Previous Year	-22	-77	—	-42	-13	-25
Percent Change, Previous Qtr.	8	-20	—	-8	-54	-11
MOHAVE COUNTY	433	302	18	8	67	828
Percent Change, Previous Year	43	-5	200	167	123	25
Percent Change, Previous Qtr.	5	-14	-18	-47	-37	-9
NAVAJO COUNTY	35	23	0	0	0	58
Percent Change, Previous Year	-22	-36	—	—	—	-28
Percent Change, Previous Qtr.	-33	-18	—	—	—	-28
PIMA COUNTY	574	16	10	0	39	639
Percent Change, Previous Year	-29	-11	25	—	-96	-66
Percent Change, Previous Qtr.	-1	0	400	—	-79	-19
PINAL COUNTY	28	76	4	0	0	108
Percent Change, Previous Year	-67	-45	—	—	—	-52
Percent Change, Previous Qtr.	-72	-13	—	—	—	-42
SANTA CRUZ COUNTY	82	112	2	0	0	196
Percent Change, Previous Year	134	7	—	—	—	37
Percent Change, Previous Qtr.	110	3	—	—	—	32
YAVAPAI COUNTY	269	122	2	14	8	415
Percent Change, Previous Year	-14	7	-50	56	-11	-7
Percent Change, Previous Qtr.	21	21	-89	40	-94	-14
YUMA COUNTY	104	114	0	0	0	218
Percent Change, Previous Year	27	-38	—	—	—	-18
Percent Change, Previous Qtr.	49	-10	—	—	—	11
TOTAL, ARIZONA	4,678	1,109	48	54	764	6,653
Percent Change, Previous Year	-19	-26	-14	26	-56	-27
Percent Change, Previous Qtr.	7	-7	-4	6	-53	-9

NR: No report.

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

ted activity. The second is the tendency of development activity to improve in the non-metropolitan counties, typically in the retail and multifamily sectors. Based on the historical pattern, the primary counties will probably be Mohave and Yavapai. However, their markets are not big enough to compensate for the weakening metropolitan counties, which so dominate the Arizona construction industry.

The first quarter's activity demonstrated some maturity on the part of the construction industry as it responded to limited economic and market potential. While the activity was declining, it still tended to follow historical patterns: most sectors were stronger than their reported levels in the fourth quarter. Until the evidence of a growing economy is stronger, construction activity probably will remain sluggish as developers seek to determine where the real short-term strength and demands of the Arizona market lie.

– Jay Q. Butler

Dr. Butler is Associate Professor of Real Estate and Director of the Arizona Real Estate Center in the ASU College of Business.

TABLE 4

ARIZONA BUILDING PERMITS
First Quarter 1989

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*
APACHE COUNTY	27	723	3	169	0	0	5	552	35	1,444
Percent Change, Previous Year	8	23	-40	-5	—	—	400	2,805	13	84
Percent Change, Previous Qtr.	0	15	-40	-2	—	—	67	-79	0	-58
COCHISE COUNTY	246	3,183	7	895	0	0	125	314	378	4,392
Percent Change, Previous Year	-1	-42	-42	-50	—	—	-26	-32	-12	-43
Percent Change, Previous Qtr.	165	421	17	12	—	—	-6	-32	63	134
COCONINO COUNTY	225	9,690	44	8,410	1	0	83	1,749	353	19,849
Percent Change, Previous Year	-26	-9	33	104	-50	—	-28	36	-23	21
Percent Change, Previous Qtr.	-16	-12	19	210	-50	—	-25	-95	-16	-59
GILA COUNTY	178	4,364	13	4,886	0	0	20	84	211	9,334
Percent Change, Previous Year	-5	-16	-19	145	—	—	-39	-78	-11	23
Percent Change, Previous Qtr.	-8	3	-7	1,221	—	—	0	17	-7	99
GRAHAM COUNTY	103	1,468	8	296	1	0	28	91	140	1,855
Percent Change, Previous Year	-14	-32	-11	492	—	—	65	38	-4	-18
Percent Change, Previous Qtr.	20	14	100	58	—	—	12	-94	22	-39
GREENLEE COUNTY	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Percent Change, Previous Year	—	—	—	—	—	—	—	—	—	—
Percent Change, Previous Qtr.	—	—	—	—	—	—	—	—	—	—
LA PAZ COUNTY	35	519	1	25	1	30	24	80	61	654
Percent Change, Previous Year	-68	-65	-80	-79	—	—	-47	21	-62	-61
Percent Change, Previous Qtr.	-71	-67	-86	-99	—	—	-71	-90	-71	-88
MARICOPA COUNTY	4,972	344,212	379	165,673	32	38,102	3,957	157,987	9,340	705,974
Percent Change, Previous Year	-20	-8	-24	-3	-22	136	-29	-3	-24	-2
Percent Change, Previous Qtr.	11	10	-16	-32	39	273	11	2	10	-3
MOHAVE COUNTY	1,091	36,002	53	8,834	1	963	313	10,647	1,458	56,446
Percent Change, Previous Year	7	41	71	241	0	1,238	-8	188	5	77
Percent Change, Previous Qtr.	-5	4	8	-27	—	—	10	496	-2	17
NAVAJO COUNTY	161	3,170	7	277	5	236	22	843	195	4,526
Percent Change, Previous Year	-9	-24	-50	-69	400	—	-59	858	-21	-13
Percent Change, Previous Qtr.	-14	-32	-36	-86	400	70	-8	3,022	-13	-33
PIMA COUNTY	1,257	46,226	60	20,217	5	2,101	1,181	19,004	2,503	87,548
Percent Change, Previous Year	-18	-27	-49	-52	67	250	3	-39	-11	-36
Percent Change, Previous Qtr.	4	2	-13	-37	-71	50	0	-10	1	-13
PINAL COUNTY	337	4,170	50	635	4	249	254	685	645	5,739
Percent Change, Previous Year	-1	-52	2	-95	—	—	47	-54	15	-74
Percent Change, Previous Qtr.	-14	-54	-51	-80	-64	-93	11	-84	-12	-72
SANTA CRUZ COUNTY	214	3,494	1	23	0	0	11	252	226	3,769
Percent Change, Previous Year	47	67	-67	-89	—	—	22	207	43	58
Percent Change, Previous Qtr.	33	25	-67	-92	—	—	175	294	33	4
YAVAPAI COUNTY	645	23,911	52	4,014	3	168	189	6,526	889	34,619
Percent Change, Previous Year	-4	2	6	-11	-25	-98	-12	111	-5	-10
Percent Change, Previous Qtr.	7	7	136	-30	0	-3	20	217	13	14
YUMA COUNTY	398	10,827	22	778	1	112	327	3,094	748	14,811
Percent Change, Previous Year	4	6	0	-64	-75	-97	38	89	16	-15
Percent Change, Previous Qtr.	33	57	-8	-46	—	—	22	119	26	52
TOTAL, ARIZONA	9,889	491,939	700	215,132	54	41,961	6,539	201,928	17,182	950,960
Percent Change, Previous Year	-14	-9	-19	-12	-4	50	-20	-2	-16	-6
Percent Change, Previous Qtr.	7	7	-13	-30	-8	156	8	-11	6	-6

*Includes mobile homes.

NR: No report.

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

Federal expenditures in Arizona declined in 1988

Federal funds distributed in Arizona in fiscal year 1988 totaled $12.2 billion, according to figures compiled by the U.S. Department of Commerce. Increases in federal spending in Arizona between 1981 and 1987 were well in excess of the national average, the inflation rate, and the economic growth rate. However, 2.5 percent fewer federal dollars were distributed in Arizona in 1988.

The decrease occurred because of a 20 percent drop in procurement payments, of which Department of Defense contracts accounted for nearly 90 percent. This decline in defense-related procurements contributed greatly to manufacturing layoffs around the state in the last year or two.

The Department of Defense accounted for nearly one-third of all federal spending in Arizona in 1988. It not only awarded most of the procurement contracts, but it distributed one-half of the wages and salaries paid to Arizonans by the federal government. The other major source of federal funds was direct payments to individuals, such as social security payments.

Arizona received 1.4 percent of all federal funds distributed to states in 1988, equal to its share of the national population. Procurement payments per person in Arizona were well above the average of the 50 states and direct payments to individuals were also above the norm.

Federal funds distributed to Arizona in other categories, however, were well below the national per capita average. This was particularly true of grants to state and local governments (see Table 1).

BY COUNTY

Cochise County received more federal funds per capita than any other county in Arizona in 1988, followed by Pima, Yuma, and La Paz counties. The least per person spending occurred in Greenlee and Santa Cruz counties.

Each of the four counties with the greatest per capita receipts of federal funds received considerable monies from the Department of Defense (see Table 2). Of the 11 other counties, only Maricopa received more than a modest amount of Defense Department funds.

Apache County received the most spending on a per person basis from federal agencies other than the Defense Department. These monies came particularly in the form of grants to local governments and salaries to workers, especially for the administration of the Indian reservations that make up so much of the county. Other counties that received substantial funds from other federal agencies included Yavapai, Gila and Pinal.

Per capita procurements were especially large in La Paz and Pima counties. Total salaries paid were particularly high in Cochise and Yuma counties, because of their large military bases. Direct payments to individuals were greatest in Mohave and Yavapai counties, each of which has a high percentage of retirees.

Unlike most economic measures, Maricopa County's share of federal funds did not match its proportion of the Arizona population. Federal spending on grants and procurements in Maricopa County occurred primarily in Mesa, Phoenix, Scottsdale and Tempe, with Mesa receiving nearly one-half of the county's Defense Department procurements.

– **Tom R. Rex**
Research Manager

TABLE 1

FEDERAL EXPENDITURES IN ARIZONA

	Millions of Dollars	*Per Capita*	*Percent of U.S. Average*	*Rank*
TOTAL	$12,248	$3,534	100%	19
Grants to state and local governments	1,177	339	74	46
Salaries and wages	1,763	509	95	25
Direct payments for individuals	6,019	1,737	106	14
Procurement	3,034	875	116	13
Other programs	256	74	49	41

Source: Federal Expenditures by State for Fiscal Year 1988, U.S. Department of Commerce, Bureau of the Census.

TABLE 2

PER CAPITA FEDERAL EXPENDITURES IN SELECTED ARIZONA COUNTIES

	TOTAL	*Department of Defense*	*All Other Agencies*	*Grant Awards*	*Salaries and Wages*	*Direct Payments*	*Procurement Awards*
ARIZONA	$3,525	$1,150	$2,375	$375	$500	$1,725	$875
Cochise	6,050	4,100	1,950	150	2,625	2,000	1,200
Pima	4,425	2,125	2,300	275	500	1,825	1,825
Yuma	4,150	1,850	2,300	200	1,800	1,775	300
La Paz	3,950	1,925	2,025	550	50	300	2,750
Apache	3,700	25	3,650	1,600	850	975	275
Yavapai	3,150	175	2,975	125	300	2,550	150
Pinal	3,125	275	2,850	325	150	1,675	750
Maricopa	3,075	950	2,125	300	375	1,625	750

Note: Miscellaneous other payments not shown.

Source: Center for Business Research, College of Business, Arizona State University. Expenditure data from *Consolidated Federal Funds Report,* U.S. Department of Commerce.

1987 census of retail trade reveals growth

Nearly 20,000 retail trade establishments were in business in Arizona during 1987, according to the U.S. Department of Commerce, Bureau of the Census, which recently released the first of the reports from the 1987 economic censuses. These firms paid more than 260,000 workers $2.6 billion in payroll while making sales of nearly 21.8 billion. Because of the large number of retail trade establishments that go in and out of business, less than 18,000 establishments were in operation at year-end 1987.

Sales increased 60 percent between the prior census in 1982 and 1987. This gain was well in excess of the 19 percent inflation rate and 18 percent population increase during those five years. The large gain was in part a result of depressed sales during 1982, when the economy was suffering through a recession.

On average, sales amounted to $1.1 million per establishment and $83,600 per employee. Retail sales establishments employed an average of 13 people with a payroll per employee (part-time and full-time) of $10,075 in 1987.

Food stores and automotive dealers were the largest of the ten categories within retail trade, each contributing nearly 23 percent of the total sales. Their shares of the number of establishments were much lower. Eating and drinking places accounted for the largest share of establishments and employment. Despite low wages, eating and drinking places still had the highest payroll. They also accounted for the greatest proportion of unincorporated businesses, followed by the miscellaneous category. Most of these unincorporated businesses were individual proprietorships. Few of the drug stores and general merchandise stores were not incorporated.

TABLE 1

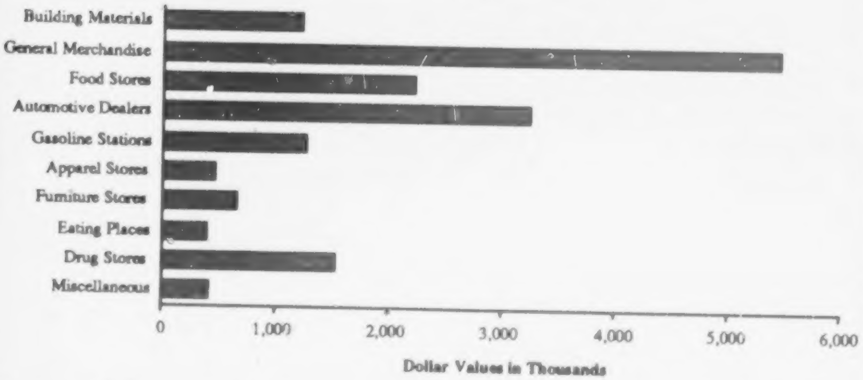
1987 CENSUS OF RETAIL TRADE
ARIZONA

	Establish-ments	*Sales in Millions*	*Employment in Thousands*	*Payroll per Employee*	*1982-87 Percent Change in Sales*
TOTAL	19,798	$21,778	260.5	$10,075	60%
Building materials	898	1,117	8.9	14,096	64
General merchandise	454	2,478	25.5	9,945	60
Food stores	2,236	4,983	41.2	12,594	49
Automotive dealers	1,517	4,918	22.9	20,088	91
Gasoline stations	1,241	1,585	10.4	9,654	21
Apparel stores	1,772	835	12.1	8,351	63
Furniture stores	1,650	1,103	10.7	13,752	73
Eating places	5,510	2,208	97.1	5,910	58
Drug stores	541	828	7.8	11,789	58
Miscellaneous	3,979	1,725	23.8	10,545	65

Source: U.S. Department of Commerce, Bureau of the Census, and Center for Business Research, College of Business, Arizona State University.

FIGURE I

1987 RETAIL SALES PER ESTABLISHMENT



Source: U.S. Department of Commerce, Bureau of the Census, and Center for Business Research, College of Business, Arizona State University.

Auto dealers enjoyed the greatest increase in sales volume between 1982 and 1987 (see Table 1), in part because of a relatively high inflation rate in car prices (34 percent). Sales increased the least at gasoline service stations, where the price of gasoline fell 21 percent during this five year period.

Eating and drinking places accounted for the largest number of retail trade establishments, but their sales per establishment were very low (see Figure I), as were their sales per employee. General merchandise stores experienced the greatest sales per establishment, but automotive dealers had the most sales per employee. Employees at auto dealerships easily made the highest average wage within retail sales; workers at eating and drinking places received the least compensation.

BY COUNTY

The Phoenix metropolitan area accounted for close to two-thirds of the state's retail sales in 1987. Pima County and non-urban Arizona accounted for nearly equal shares.

Among the rural counties, sales were greatest in Coconino County, followed by Yuma and Yavapai counties. The rankings were somewhat different when sales were measured on a per capita basis. The level of sales per resident population was highest in Santa Cruz County, followed by Maricopa, Coconino, Yuma, Pima and Mohave counties. Per capita sales were quite low in Greenlee and Apache counties (see Table 2).

Several reasons exist for the variation in per capita sales: differing consumption habits of residents, which are greatly influenced by ethnic and income differentials; variations in the degree of tourism; differences in the number of seasonal residents, such as students and snowbirds; and the geographic mobility of shoppers.

Santa Cruz's high per capita sales were largely explained by its sales to Mexican citizens; Maricopa County's high level resulted from a combination of all factors. Greenlee County's sales were low because its residents do much of their shopping elsewhere, particularly in neighboring Graham County.

Per capita sales in the building materials category was highest in many of the rural counties because of strong sales of hardware and mobile homes. General merchandise store sales per resident were highest in Santa Cruz County, distantly followed by Pima County. Sales to Mexican citizens made the difference.

Per capita gasoline sales were highest in rural counties where more cross-country travel occurs, particularly in La Paz and Mohave counties. Sales per person at eating and drinking establishments were greatest in Coconino County, due to its large number of tourists.

BY MAJOR CITY

Per capita retail sales by category varied widely among Maricopa County's largest cities (see Table 3), resulting from differences in income levels, the number of seasonal residents, and the geographic locations of major shopping malls, auto dealerships, and other retail centers.

Total sales per capita were by far the highest in Scottsdale, with sales particularly high at eating and drinking places, automotive dealers and miscellaneous retail outlets. Mesa's sales were next-highest, due largely to sales at its general merchandise stores. The only two large malls in the southeast Valley are located in Mesa.

Sales at all five of the county's largest cities exceeded the metro area average. Glendale's sales per capita were well below the norm in most of the ten categories, but its congregation of automotive dealers pulled its overall figure slightly above the metro average.

Tempe's sales were relatively low at general merchandise and apparel stores, due to its lack of a major shopping mall. But sales at food stores and eating and drinking places were well above average.

Since Phoenix accounts for nearly one-half of the urban area's population, its per capita sales were not much different from the average in any category. Comparing the entire county to Pima County reveals higher overall per person sales in the Phoenix area, especially at food stores, automotive dealers and miscellaneous retail outlets. Tucson area sales were higher in the general merchandise category.

– **Tom R. Rex**
Research Manager

TABLE 2

1987 CENSUS OF RETAIL TRADE ARIZONA AND COUNTIES

	Establishments	*Sales in Millions*	*Per Capita Sales*	*Employment in Thousands*
ARIZONA	19,798	$21,778	$6,370	260.5
Maricopa	11,133	13,889	7,050	163.9
Pima	3,675	3,901	6,090	48.6
Yavapai	780	523	5,750	6.3
Coconino	678	591	6,490	8.1
Mohave	599	486	6,080	5.5
Cochise	571	401	4,050	4.8
Yuma	546	586	6,440	7.0
Pinal	509	434	4,060	5.0
Navajo	408	302	4,030	3.4
Gila	261	173	4,310	2.1
Santa Cruz	211	186	7,420	2.2
Apache	159	129	2,040	1.3
Graham	135	98	4,090	1.2
La Paz	98	62	4,460	0.8
Greenlee	35	17	1,910	0.2

Source: U.S. Department of Commerce, Bureau of the Census, and Center for Business Research, College of Business, Arizona State University.

TABLE 3

1987 CENSUS OF RETAIL TRADE PER CAPITA SALES, SELECTED AREAS

	Arizona	*Non-urban Arizona*	*Pima County*	*Maricopa County*	*Glendale*	*Mesa*	*Phoenix*	*Scottsdale*	*Tempe*
TOTAL	$6,370	$4,930	$6,086	$7,054	$7,102	$8,450	$7,265	$12,519	$7,891
Building materials	327	338	328	322	338	484	313	282	297
General merchandise	725	510	824	781	471	1,584	790	1,566	354
Food stores	1,457	1,335	1,302	1,558	1,397	1,580	1,587	2,096	2,059
Automotive dealers	1,438	893	1,296	1,709	3,250	2,155	1,474	4,010	2,052
Gasoline stations	463	605	420	419	324	308	477	489	474
Apparel stores	244	149	260	278	110	379	334	497	170
Furniture stores	323	138	315	401	257	503	446	663	517
Eating places	646	456	619	733	456	713	794	1,475	991
Drug stores	242	206	260	251	213	319	263	315	255
Miscellaneous	505	300	461	603	294	428	784	1,118	722

Source: U.S. Department of Commerce, Bureau of the Census, and Center for Business Research, College of Business, Arizona State University.

Economic gains remained modest in March

Sluggish economic conditions continued in Arizona's metropolitan areas in March according to the coincident economic indexes. The index for Maricopa County rose just 0.2 percent to 151.6 (1982=100). In Pima County, the 0.7 percent gain to 140.7 did not completely offset February's large loss. The index for non-urban Arizona jumped 1.1 percent to 134.5, following two months of little gain.

During the first three months of 1989, the coincident indexes for the Phoenix area and non-urban Arizona performed similarly, except that commercial building permit valuations dropped much more in the Phoenix area. The result was subpar quarterly growth of 0.8 percent in the Phoenix area, but a relatively strong gain of 1.2 percent in rural Arizona.

As in the other areas of the state, retail sales in metropolitan Tucson increased while building permit valuations declined. The statewide decrease in commercial construction activity is depicted in Figure I. However, the unemployment rate rose in the Tucson area — it was flat elsewhere — and employment barely advanced compared to moderate gains elsewhere. The result was a net decline of 0.1 percent in the first quarter in the Tucson area.

Retail sales jumped in March, especially outside the Phoenix area, reaching the highest level on record. In contrast, the value of commercial building permits plunged except in the Tucson area, which had experienced a big drop in February. The monthly value in Maricopa County was the lowest since 1982.

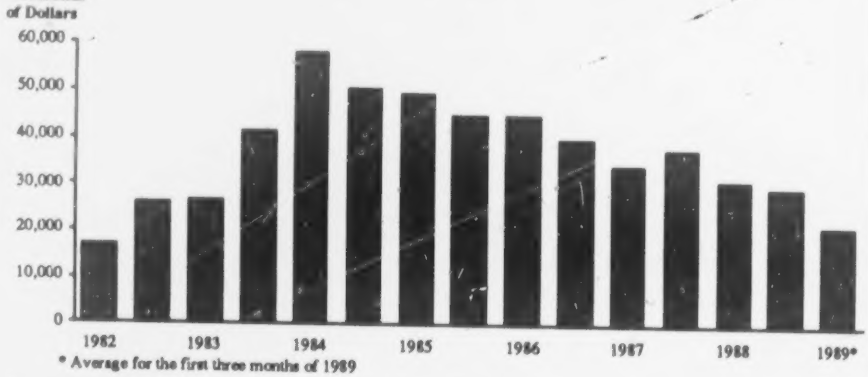
The composite index for Arizona rose 0.4 percent in March to 146.6, bringing the increase during the first three months of 1989 to 0.7 percent.

Preliminary data suggests that the state's economy expanded again in April at a mediocre rate.

– Tom R. Rex
Research Manager

FIGURE I

SIX-MONTH AVERAGE REAL VALUE OF COMMERCIAL BUILDING PERMITS
Seasonally Adjusted



Source: Center for Business Research, College of Business, Arizona State University.

May purchasing indicators predict more slow growth

The Arizona economy was in a holding pattern in May, as the efforts of the Federal Reserve to slow the economy have been effective. The advances in new orders and in production were only marginal; both growth rates dropped substantially from April and were the lowest since February. Employment was unchanged, and a large inventory reduction took additional steam out of the economy. The good news is that inflationary pressures are easing; prices registered the lowest increase rate in close to two years.

The momentum built by the upticks seen in March and April both in new orders received and in production lost its punch in May. However, price pressures are softening, which should permit the economy to come in for the soft landing that has been talked about so much. The Arizona economy probably will continue to show only moderate growth over the balance of the year.

– Harold Fearon

TABLE 1

MAY PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (May compared to April)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	41	54	5
Delivery time from vendors	25	70	5
Purchased materials inventory level	20	44	36
New orders received	33	39	28
Production	29	46	25
Employment	20	61	19
Purchases	33	40	27

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Year-to-Date Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	4th Qtr.	61.103	1.7	5.0	NA	NA
Arizona - 1982 Dollars	4th Qtr.	48.005	0.0	0.9	NA	NA
COINCIDENT ECONOMIC INDEXES (1982 = 100)						
Arizona	March	146.6	0.4	2.8	NA	NA
Metropolitan Phoenix	March	151.6	0.1	2.9	NA	NA
Metropolitan Tucson	March	140.7	0.6	2.2	NA	NA
Non-urban Arizona	March	134.5	1.1	3.3	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	1st Qtr.	123.7	1.0	5.4	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1982 = 100)						
Arizona	April	118.6	–0.4	–1.3	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	March	255,002	16	–14	705,974	–2
Pima County	March	31,073	36	–55	87,548	–35
Balance of State	March	64,108	28	–15	157,438	2
Arizona	March	350,183	20	–20	950,960	–6
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	March	1,550	31	–32	3,592	–25
Pima County	March	274	76	–75	639	–66
Balance of State	March	805	–18	–10	2,422	0
Arizona	March	2,629	13	–39	6,653	–27
HOME SALES						
Maricopa County - Number	April	3,830	15	–13	14,260	–4
Maricopa County - Median Price	April	79,000	1.0	0.0	79,900	0.0
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	1st Qtr.	88	–3.3	0.0	NA	NA
Metropolitan Phoenix - Resale Homes	1st Qtr.	124	0.8	2.4	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	May	10.7	–2.7	2.9	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	1st Qtr.	2,048	0.5	2.0	NA	NA
Arizona	1st Qtr.	3,550	0.5	2.0	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	March	3,229	7.1	3.8	9,840	5.3

NA = Not Applicable

Source: Center for Business Research, Arizona Real Estate Center, and Economic Outlook Center, College of Business, Arizona State University.

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2nd quarter valley inflation remains moderate

Little Change is Anticipated

Phoenix area inflation during second quarter 1989 was only slightly higher than during the prior quarter (see Table 1). As expected, the 1.3 percent seasonally adjusted increase in prices of Phoenix area goods and services was within the 1.0 to 1.5 percent quarterly range that is likely to persist into the foreseeable future.

Before seasonal adjustment, the Metropolitan Phoenix Consumer Price Index climbed 1.8 percent to 125.9 (1982–84 = 100). The annual increase was 5.0 percent, slightly less than the rate at the end of the first quarter.

COMPONENT INDEXES

As in the first quarter, the transportation and food and beverages categories were most responsible for the CPI advance. The sharp jump in gasoline prices in April accounted by itself for more than one-fourth of the overall increase. Excluding the gasoline category, the inflation rate was just 0.9 percent, less than the first quarter's 1.1 percent and the aberrantly high 2.2 percent of fourth quarter 1988.

Food and Beverages

The second quarter's advance was equal to that of the first quarter and the fifth straight gain of at least 1.3 percent. The composition of the second quarter's increase was much different, however. Food at home price increases slowed considerably to 1.4 percent, the least since fourth quarter 1987, while food away from home and alcoholic beverages price gains accelerated, the former to the highest rate since seasonal adjustment began in 1984.

Within the grocery items category, rapid inflation in the fruits and vegetables grouping continued, with the second quarter's 4.1 percent gain the sixth straight of at least 3 percent. The annual change through the second quarter was 30 percent. The meats, poultry, fish and eggs subcategory also experienced another large rise, with the 2.2 percent gain the fifth straight of at least 1.6 percent.

In contrast, modest changes were recorded in the other subcategories, including a decline in prices of dairy products (see Table 2).

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Housing

Housing costs rose a modest 0.4 percent, following a slight decrease during the first quarter. Consumers continued to benefit from the high vacancy rates in both single-family and multifamily housing. Homeowner's costs increased a moderate 0.7 percent while renters' costs advanced 0.6 percent. Rental rates for apartments again declined sightly.

Fuel and utility costs also dropped, with a major factor being the reduction in telephone rates. In contrast, prices of household furnishings and operations rose 1.7 percent.

Transportation

Despite the jump in gasoline prices, transportation costs climbed less than in the two prior quarters, though the 1.9 percent rate still was relatively high. Contributing to the increase were finance charges, which rose by the largest amount since 1984.

The net increase in the other subcategories was nil, as lower prices were available for a number of items, including public transportation.

Medical Care

Health care costs went up a relatively fast 2.3 percent in the second quarter. Health insurance premiums jumped for the second straight quarter, but hospital expenses moderated again, following large gains in 1988. The other subcategories continued an erratic quarter-to-quarter pattern, with large second quarter advances in

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TABLE 1

PERCENT CHANGES IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Seasonally Adjusted from Preceding Quarter					
Expenditure Category	*Relative Importance*	*1st 1988*	*2nd 1988*	*3rd 1988*	*4th 1988*	*1st 1989*	*2nd 1989*
ALL ITEMS	100.0	0.8	1.3	0.9	2.0	1.1	1.3
Food and Beverages	16.5	0.9	2.0	1.3	1.4	1.9	1.9
Housing	41.7	1.0	0.2	0.4	1.7	–0.1	0.4
Apparel and Upkeep	6.1	2.3	2.9	3.6	1.5	0.7	0.3
Transportation	19.3	–0.5	2.4	1.0	3.1	3.0	1.9
Medical Care	6.8	0.3	3.3	0.4	2.8	1.2	2.3
Entertainment	4.6	1.2	0.1	1.2	3.6	2.1	3.7
Other Goods and Services	5.0	2.2	0.9	0.8	1.1	1.2	1.4

TABLE 2

METROPOLITAN PHOENIX CONSUMER PRICE INDEX
Second Quarter 1989

	Index (1982-84 = 100)		Percent Change from	
Expenditure Category	*Last Quarter*	*This Quarter*	*Last Quarter* *	*Year-Ago Quarter*
ALL ITEMS	123.7	125.9	1.3	5.0
Food and Beverages	124.3	127.5	1.9	6.9
Food	123.5	126.8	2.2	7.3
Food at Home	128.1	131.4	1.4	9.8
Cereal and Bakery Products	140.5	140.8	0.6	7.2
Meats, Poultry, Fish, and Eggs	119.2	121.2	2.2	8.7
Dairy Products	116.2	114.7	–1.3	1.4
Fruits and Vegetables	171.3	190.7	4.1	30.3
Other Food at Home	117.3	118.0	0.6	5.0
Food Away from Home	118.3	122.0	2.8	4.5
Housing	116.6	118.2	0.4	2.4
Shelter	116.5	117.2	0.6	1.9
Renters' Costs**	116.5	117.2	0.6	–1.6
Homeowners' Costs**	120.5	121.3	0.7	3.5
Fuel and Other Utilities	114.5	120.3	–1.3	–0.1
Gas (piped) and Electricity	105.6	116.8	–1.0	0.6
Household Furnishings/Operations	118.0	119.4	1.7	5.7
Apparel and Upkeep	125.4	127.2	0.3	6.3
Transportation	124.6	127.7	1.9	9.1
Private Transportation	124.2	127.8	2.2	9.7
New and Used Cars	136.3	137.4	1.1	6.8
Motor Fuels	77.6	90.5	11.4	18.4
Public Transportation	121.9	122.4	–0.2	5.3
Medical Care	153.1	156.2	2.3	7.0
Entertainment	147.7	145.6	3.7	5.1
Other Goods and Services	135.9	138.1	1.4	4.5

*Seasonally adjusted

**Base period is second quarter 1983.

TABLE 3

METROPOLITAN PHOENIX AND UNITED STATES CONSUMER PRICE INDEXES
Second Quarter 1989

	Percent Change from Last Quarter*		Percent Change from One Year Ago	
Expenditure Category	*Phoenix*	*United States*	*Phoenix*	*United States*
ALL ITEMS	1.8	1.8	5.0	5.4
Food and Beverages	2.6	1.6	6.9	6.5
Housing	1.4	0.8	2.4	3.7
Apparel and Upkeep	1.4	4.4	6.3	3.5
Transportation	2.5	3.9	9.1	7.3
Medical Care	2.0	1.6	7.0	7.3
Entertainment	–1.4	1.0	5.1	4.8
Other Goods and Services	1.6	0.9	4.5	7.6

*Not seasonally adjusted

Source (Tables 1, 2 and 3): Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data in Table 3 are from the U.S. Department of Labor, Bureau of Labor Statistics.

non-prescription drugs and professional services, but a small increase in prescription drug prices.

Other Categories

Apparel and upkeep prices rose minimally, the second straight small advance following large gains throughout 1988. Prices of other goods and services again climbed by a moderate amount. In contrast, entertainment costs continued to rise rapidly.

COMPARISON AREAS

Before seasonal adjustment, inflation in the Phoenix area during the second quarter was identical to the national average. Higher inflation in food and beverages, housing and other goods and services was offset by lower inflation in apparel and upkeep, transportation, and medical care (see Table 3).

The annual inflation rate was comparable in the two areas. Lower inflation in housing and other goods and services in the Phoenix area was negated by higher inflation in apparel and upkeep and in transportation.

OUTLOOK

While the inflation rate clearly has accelerated during the last few quarters, the increase in the underlying rate has not been that steep and shows signs of stabilizing. Much of the higher rate has derived from prices of food and gasoline, neither of which is likely to see continued advances as large as those in recent quarters.

The quarterly increase in the Phoenix area CPI is likely to remain in the 1.0 to 1.5 percent range for the immediate future. Somewhat smaller gains in the transportation and food and beverages categories likely will be offset by slightly larger rises in the housing category than the nearly zero change during the first half of 1989. Housing inflation still should be good news to the consumer, however.

The annual inflation rate therefore should remain in the 5.0 to 5.5 percent range, resulting in an annual average of 5.2 percent in 1989.

– **Tom R. Rex**
Research Manager

Lower population growth is projected by DES

A new set of population projections has been generated by the Arizona Department of Economic Security (DES), the first comprehensive update since fall 1986. These figures form the state's "official" projections, which must be used by all state agencies and are widely used in the private sector as well.

Under the new assumptions, projected population growth is much lower in the metropolitan areas, especially in the Phoenix area, where the projected 1988-2000 growth rate dropped from 57 percent in the previous set of projections to 38 percent. Population projections for rural Arizona were hardly changed.

The lowered expectations result in part from the slow growth experienced since early 1987 and the likelihood of subpar population gains for at least another couple of years. The downward revision extends to annual growth rates years into the future, however. As discussed in the November 1988 issue of *Arizona Business*, the accuracy of long-term population projections in Arizona have been cyclical, matching the conditions of the time in which they were generated (see Figure I).

The state's new figures are reasonably similar (see Table 1) to the population projections published by the CBR in the February issue of *Arizona Business*. Part of the difference in the projected population results from disagreement on the 1988 estimate. Beyond that, the DES figures show somewhat faster growth in the Tucson area and rural Arizona, but slightly smaller population gains in the Phoenix area than do the CBR projections. In all cases, the DES figures fall within the range defined by the CBR's low and high scenarios printed in the February article.

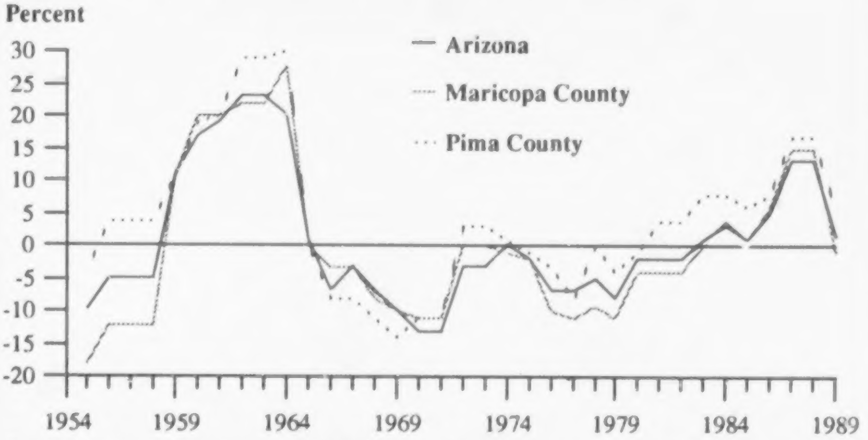
Historically, Pima County's growth has been overprojected in comparison to Maricopa County, as seen in the graph. The new projections may perpetuate this error, though the degree of any bias is relatively small.

Limited time and funding precluded fine tuning by DES of the new set of projections, which probably will remain in effect until 1991, when 1990 census data can begin to be incorporated into the projection process. In the meantime, the new projections can safely be used by public and private sector entities.

– Tom R. Rex
Research Manager

FIGURE I

APPROXIMATE PERCENT ERROR IN PROJECTIONS
OF POPULATION FIVE TO TEN YEARS IN FUTURE



Source: Center for Business Research, College of Business, Arizona State University. The past projections were made by a variety of sources, but many were obtained from the Arizona Statistical Review published annually by Valley National Bank. Percent errors after 1980 are estimated.

TABLE 1

COMPARISON OF POPULATION ESTIMATES AND PROJECTIONS
(In Thousands)

	1980	1988 Estimate		2000 Projection			2010 Projection		
	Census	*ASU*	*DES*	*ASU*	*New DES*	*Old DES*	*ASU*	*New DES*	*Old DES*
Total Population									
Maricopa County	1,509	2,015	2,036	2,815	2,801	3,252	3,570	3,490	4,052
Pima County	531	654	664	825	877	974	1,000	1,075	1,257
Non-urban Arizona	677	828	848	1,070	1,123	1,109	1,285	1,375	1,377
ARIZONA	2,717	3,497	3,548	4,710	4,801	5,335	5,855	5,940	6,686
Population Change									
Maricopa County	538	506	527	800	765	1,216	755	689	800
Pima County	180	123	133	171	213	310	175	198	283
Non-urban Arizona	223	151	171	242	275	261	215	252	268
ARIZONA	941	780	831	1,213	1,253	1,787	1,145	1,139	1,351

Source: Center for Business Research, College of Business, Arizona State University; Arizona Department of Economic Security, Population Statistics Unit; U.S. Department of Commerce, Bureau of the Census (1980).

Gross county product growth slowed in 1987

Economic growth slowed in 1987 in most of Arizona's counties. The disparity in growth rates between the Phoenix metropolitan area and the rest of the state shrunk, however, according to Gross County Product (GCP) estimates.

The GCP is heavily based on personal income figures prepared by the U.S. Department of Commerce. The receipt of 1987 data in June was accompanied by revisions to 1985–1986 estimates of personal income. Revised figures generally were lower, though not by large amounts. Last year's GCP report (*Arizona Business*, September 1988) discussed GCP methodology and described historic economic growth by county. This report will focus on data since 1982.

CURRENT DOLLAR GCP

Maricopa County's 1987 gross product of $38.9 billion accounted for 69 percent of the state total. Pima County's product added another 16 percent, leaving the 13 rural counties with just a 15 percent share. The GCP of three of the rural counties surpassed $1 billion (see Table 1), but no rural county's sectoral share exceeded 2 percent.

Despite the small overall share, rural Arizona contributed nearly 50 percent of the state's agricultural product and 75 percent of its mining output. Government also is disproportionately important to the rural counties. In contrast, FIRE (finance, insurance and real estate) has little presence in non-urban Arizona, making up just 6 percent of the state's total. FIRE is highly concentrated in the Phoenix area. Manufacturing in the rural counties makes up just 8 percent of the state total.

SECTORAL SHARES

Statewide, five of the nine major industries contributed between 13 and 18 percent each of the 1987 total gross product, providing a reasonably balanced economy, though most of these industries were highly dependent on population growth. Agriculture and mining accounted for just 3 percent and 2 percent, respectively, of the state's gross product.

In contrast, government alone made up nearly one-fourth of the gross product in rural Arizona. Agriculture and mining's shares were comparatively high: 7 and 11 percent, respectively.

In most rural counties, one industry is considerably larger than the rest. Examples, seen in Table 1, include:

- Apache — government (34%)
- Cochise — government (47%)
- Coconino — government (30%)
- Gila — mining (31%)
- Graham — government (34%)
- Greenlee — mining (82%)
- La Paz — agriculture (28%)
- Pinal — mining (25%)
- Santa Cruz — trade (35%)

Sectoral shares in some cases have changed substantially in recent years. Agriculture's problems in the first half of the 1980s led to much smaller sectoral shares in Apache, Graham and Yuma counties. Likewise, mining's difficulties through the mid-1980s caused noticeable declines in its share in Cochise, Gila, Graham, Mohave, Pima, Pinal and Yavapai counties. In contrast, mining's share rose in Greenlee County, the county that most dominated by the industry.

These declines in the old mainstays of the Arizona economy were offset by increasing sectoral shares in various industries. The services industry gained in Cochise, Gila, Mohave and Pima counties. Government's share rose in Gila, Graham and Pinal counties. TCPU (transportation, communication and public utilities) gained in Apache County and manufacturing advanced in Pinal County.

ECONOMIC GROWTH

Annual rates of change in inflation-adjusted GCP since the recession year of 1982 are shown in Table 2. Growth rates in the metropolitan counties slowed each year after the 1984 peak, but in most rural counties the rate of growth was erratic from year to year.

TABLE 1

1987 GROSS COUNTY PRODUCT

	Total in Millions	Sectoral Shares								
		Agric.	Mining	Constr.	Mftg.	TCPU	Trade	FIRE	Serv.	Govt.
Apache	$477	6%	0%	12%	6%	15%	7%	5%	17%	34%
Cochise	989	4	1	4	4	11	11	6	12	47
Coconino	1,114	3	2	6	9	9	16	7	19	30
Gila	426	1	31	5	15	7	11	5	10	14
Graham	170	12	1	5	3	7	17	9	14	34
Greenlee	201	1	82	2	1	2	2	1	2	6
La Paz	120	28	1	4	5	5	18	5	16	18
Maricopa	38,863	2	0	7	16	8	17	22	18	10
Mohave	693	1	4	10	14	10	19	12	18	13
Navajo	819	4	18	5	8	22	10	4	13	16
Pima	8,793	1	2	7	16	7	15	14	21	17
Pinal	1,252	10	25	5	12	6	10	6	8	19
Santa Cruz	287	3	0	3	13	11	35	9	11	15
Yavapai	845	3	9	10	9	8	17	10	19	16
Yuma	1,198	21	1	5	4	8	16	7	14	24
Non-urban	8,591	7	11	6	8	10	14	7	14	24
ARIZONA	56,248	3	2	7	15	8	16	18	18	13

Source: Center for Business Research, College of Business, Arizona State University.

The only county economies that expanded more rapidly in 1987 than in 1986 were La Paz and Mohave. Four counties endured a shrinking economy in 1987; Pima County experienced no growth.

In the first half of the 1980s, difficulties in the mining and agriculture industries had the effect of lowering growth rates in many counties. The adjusted gauge, excluding these industries, measured much more growth in most counties. In the five years after the recession year of 1982, the gross product fell in Greenlee County and rose by only small amounts in Gila and Graham counties.

While the adjusted GCP generally measured more growth than the overall measure from 1982 to 1987, the only counties with much difference between the measures in 1986-87 were La Paz and Pinal. Pinal County's growth rates are greatly different on the two measures over the five years. Traditionally dominated by the fast-declining mining and agriculture industries, the county experienced rapid growth in manufacturing and construction in the 1980s.

Growth rates for the state as a whole during the first five years of the expansion following the 1982 recession were led by the manufacturing and construction sectors. Government and agriculture lagged behind, and mining declined. The other industries — services, TCPU, trade, FIRE — experienced comparable growth, near the overall average rate. This pattern largely held in the two urban areas, but in rural Arizona, the growth rates of manufacturing, trade and FIRE all were somewhat lower.

OUTPUT PER EMPLOYEE

Dividing gross product by employment gives a measure of output per employee. This measure varies widely by industry, depending on such conditions as average wage, labor intensivity, income from sources such as interest and rentals, and profits. While overall output per employee was $31,100 in 1986 (the last year for which county employment figures are available from the U.S. Department of Commerce), it ranged as high as $81,100 in the mining industry. Also well above the average were TCPU and FIRE. The lowest output per employee figure was in the services industry, followed by trade.

Overall output per employee varied by county in part because of varying industrial mixes. Counties with greater shares of mining, FIRE and TCPU and/or lesser shares of services and trade will tend to have higher overall figures. County differences in output figures by industry add to the variation.

The highest output per employee was in Greenlee County, which derived more than 80 percent of its GCP from mining. Further, its output per employee in several other industries was higher than the state average. Maricopa County's output per employee was next highest; its sectoral figures were above the state average in almost all industries.

The lowest outputs per employee occurred in La Paz, Yavapai and Mohave counties. By sector, output per employee generally was lower than the state average in each of these three counties.

OUTLOOK

The Gross State Product growth in 1988 was virtually identical to that in 1987 (2 percent). This suggests that 1988 GCP growth probably will not be much different either. Maricopa County's growth probably slowed slightly, offset by somewhat faster growth in some rural counties. Performance during 1989 appears to be similar to that in 1988.

– **Tom R. Rex**
Research Manager

TABLE 2

INFLATION-ADJUSTED PERCENT CHANGE IN GROSS COUNTY PRODUCT

	1982	1983	1984	1985	1986	1987	1982-87	Adjusted 1982-87
Apache	0%	7%	12%	–6%	8%	2%	24%	29%
Cochise	–2	4	4	2	1	1	11	19
Coconino	–5	6	7	5	8	3	32	30
Gila	–16	–15	9	–2	–8	–4	–20	6
Graham	–6	–4	12	–10	3	2	2	13
Greenlee	–41	21	8	–15	–8	–6	–3	–24
La Paz	NA	NA	2	7	0	6	NA	NA
Maricopa	–1	8	12	10	7	3	47	48
Mohave	–10	5	12	13	2	4	41	51
Navajo	2	2	8	1	4	–2	13	28
Pima	–5	5	9	6	3	0	25	35
Pinal	–17	–19	15	–2	6	–1	–3	50
Santa Cruz	–7	2	9	5	7	5	31	31
Yavapai	–6	10	2	7	5	5	32	44
Yuma	1	NA	6	4	7	2	NA	NA
Yuma/La Paz	1	–2	6	5	6	2	17	23
Non-urban	–8	–2	8	2	4	1	14	30
ARIZONA	–3	6	11	8	6	2	37	43

NA: Not available; La Paz County created January 1, 1983, from a portion of Yuma County.

Note: Adjusted gross product excludes the contributions of the agriculture and mining industries.

Source: Center for Business Research, College of Business, Arizona State University.

Service sectors are leading job creators in 1980s

The greatest employment growth during the 1980s primarily has occurred in relatively low-paying service and support sectors. Basic industries — those that sell to customers outside the local area or otherwise import money into the area — generally lead the overall growth and development of an area. Most basic industries are relatively high-paying, such as manufacturing, mining, federal government and part of construction, but none of these industries are near the top of the 1980s growth industries. Of the lower-paying basic industries — agriculture and tourism — the hotel/motel sector was among the ten with the greatest employment gain.

The 1983-86 boom was dominated by construction-real estate and accented by service jobs, many with relatively low wages. When the inevitable down-cycle in construction-real estate occurred, not much was left to drive the economy. The result is the slow economic growth experienced during the last couple of years.

Employment always is an important indicator, but probably is more so in an area such as Arizona that experiences strong net in-migration. Because job growth leads population change, the nature of the job — its salary level and industry — plays a role in determining the nature of the area's overall growth.

The analysis in this article derives from 1970-87 total employment data provided by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA). Though not very timely — annual data are only available several months after year-end — the BEA data takes in all industries, including agriculture and military and reports it on a disaggregated basis. Further, the data includes self-employed and is consistent over time.

MAJOR INDUSTRIES

Total employment growth has centered on two industries — services and FIRE (finance, insurance and real estate) — both during the current economic cycle and during the last two decades. The highly cyclical construction industry showed an increase in sectoral share through 1987 (see Table 1), but this gain will have disappeared by the time 1989 data are available.

The growth of services and FIRE has been at the expense of the old mainstays of the Arizona economy: farming, mining and government. The manufacturing industry's sectoral share has declined as well. Except for durables manufacturing in the late 1970s, the manufacturing industry has grown slower than the overall Arizona economy since the late 1960s.

Basic industries in Arizona are farming, mining, manufacturing, part of construction, federal government and military, and tourism. With the possible exception of tourism, which spreads through several industries and is difficult to identify, none of the basic industries are keeping pace with the growth of the overall economy.

TABLE 1

TOTAL EMPLOYMENT SECTORAL SHARES, ARIZONA

		Change			
	1987	*1970-75*	*1975-82*	*1982-87*	*1970-87*
Farm	1.2%	–1.0	–0.7	–0.5	–2.2
Agricultural Services	1.4	0.2	0.0	0.1	0.3
Mining	0.8	–0.4	–1.2	–0.7	–2.3
Construction	7.3	–0.7	0.5	1.1	0.9
Non-durables Manufacturing	2.5	–0.1	–0.2	–0.2	–0.5
Durables Manufacturing	8.5	–1.5	1.1	–0.8	–1.2
Transportation, Communication, Public Utilities	4.1	–0.2	–0.1	–0.2	–0.5
Wholesale Trade	4.1	0.2	0.0	0.0	0.2
Retail Trade	17.4	0.2	0.4	–0.8	–0.2
Finance, Insurance, Real Estate	10.2	0.9	1.3	1.7	3.9
Services	26.8	1.5	2.6	2.9	7.0
Federal Government	2.5	–0.1	–1.0	–0.4	–1.5
Military	2.2	–1.1	–1.0	–0.6	–2.7
State and Local Government	10.9	2.0	–1.7	–1.6	–1.3

Source: Center for Business Research, College of Business, Arizona State University, from U.S. Department of Commerce, Bureau of Economic Analysis data.

INDUSTRIAL SUBSECTORS

Manufacturing

Non-durables manufacturing has experienced slightly less growth than the overall economy since 1970. Its largest sub-industry, printing and publishing, has grown rapidly since the mid-1970s, but pays only an average wage and is less basic in nature than most manufacturing industries.

Durables manufacturing in Arizona is concentrated in four categories: machinery, electronics, instruments and transportation equipment. Each is a high-paying industry, basic in nature.

Non-electric machinery has experienced not just decreases in sectoral share, but employment declines in the 1980s, after strong growth between 1976 and 1981. Except from 1977 through 1981, electronics has shown slower than average employment growth. Transportation equipment — largely aircraft in Arizona — has experienced only average growth except between 1984 and 1986, when increases in defense spending boosted the industry. Instruments is the only category to exceed average employment growth, with the fastest growth in the late 1970s.

Agriculture

Farming, a basic industry, has been in steady decline, while agricultural services, a non-basic sector, has seen modest increases in sectoral share. Much of its gain has occurred in landscape and horticultural services in the urban areas. Average pay in this industry, like farming, is low.

Mining

Employment, dominated by copper mining, has declined sharply, though salaries remain high. While employment has stabilized, the sectoral share of this basic industry will continue to decline.

Construction

Each of the three subsectors are highly cyclical. General contractors and heavy construction are relatively high-paying fields in which part of the work can be considered basic, but each is growing relatively slowly. In contrast, special trade contractors are experiencing rapid growth, but the average pay is near the mean of all industries and less of the work can be thought of as basic.

Government

Federal government employment, both civilian and military, is basic. The average wage of the former is high, but that of the latter is relatively low. Both sectors have experienced slow growth. State and local government, which includes school teachers, is an average-paying, non-basic function which has experienced below average employment growth since the late 1970s, despite the creation of many jobs.

Services

Most of the services subsectors have participated in the rapid growth of the overall industry. Most are low-paying; only pieces can be considered basic in nature. Hotels and other lodging places is one sector that is basic; its employment gains from 1983 through 1987 were strong following average gains during the prior 15 years. The only high-paying segments of the services industry — health, legal, and miscellaneous services — each experienced healthy growth.

Other subcategories with higher than average gains included auto repair and service, amusements, and business services. The latter has a basic component and experienced the fastest growth of all. In most cases, growth was especially strong in the 1983–87 period.

Trade

Except for that portion of sales made to tourists, trade is a service and support industry. In most subcategories, it is very low-paying; wholesale trade is the major exception. In most cases, near-average employment growth has occurred. The fastest growth has occurred at eating and drinking places; the slowest at auto dealers and general merchandise stores.

FIRE

The only major segment of FIRE not to see above average employment growth is insurance carriers, the only grouping that may have a basic element. Real estate is the only subsector not having a higher than average wage; it experienced extremely large employment gains between 1984 and 1986. Growth in both the banking industry and in the insurance agents category were greatest in the mid-1980s.

TABLE 2

INDUSTRIES WITH GREATEST EMPLOYMENT GAINS
ARIZONA, 1980-87

	Change In Thousands	Percent Change	Basic Industry	Average Wage
1. Business Services	59	122%	no	Slightly less
2. Real Estate	49	98	no	Average
3. Health Services	38	63	no	Slightly high
4. Eating and Drinking Places	35	52	no	Very low
5. Special Trade Construction	34	67	part	Average
6. State and Local Government*	30	18	no	Average
7. Wholesale Trade	20	37	no	Slightly high
8. Miscellaneous Services	16	69	no	Slightly high
9. Hotels and Other Lodging	15	63	yes	Low
9. Personal Services	15	74	no	Low
9. Banking	15	57	no	Slightly high
9. Miscellaneous Retail	15	41	no	Low
TOTAL	494	39		

*Includes teachers

Source: Center for Business Research, College of Business, Arizona State University, from U.S. Department of Commerce, Bureau of Economic Analysis data.

TCPU

Within the transportation section, trucking and warehousing and air transportation are the two largest employers, each paying slightly higher than average wages. The former category experienced near average growth; a portion of the warehousing function is a basic industry. Air transportation, a non-basic industry, has grown rapidly since 1984.

Communications is a high-paying, non-basic industry in which rapid growth from 1977 to 1982 has been reversed by employment declines in recent years. The public utilities subsector, also a high-paying, non-basic industry, has consistently experienced average growth.

Growth leaders

The sectors with the greatest employment gains between 1980 and 1987 are summarized in Table 2. The listing would not be much different if it measured growth since 1970. Most of the sectors listed in Table 2 also would be on the list of highest percentage growth industries.

Service and support sectors that on net pay below average wages dominate Table 2. Business services alone accounted for 12 percent of all new jobs. Real estate positions formed an incredible 10 percent of the total, some 20,000 more jobs than would have been predicted by the trend in this sector's growth.

NON-WAGE EMPLOYMENT

According to BEA data, Arizona employment, including part-time workers, exceeded 1.75 million in 1987. More than 250,000 of the total were positions not included in wage and salary employment. For a number of years, this segment of the work force has grown more on a percentage basis than wage and salary employment. Growth was particularly strong from 1982 through 1985, when non-wage employment rose more than 10 percent per year, increasing by more than 20,000 in both 1984 and 1985.

Real estate has by far the largest number of non-wage workers, accounting for more than 25 percent. Real estate accounted for nearly one-half of the positions added during the 1984-85 boom. By 1987, however, the gain in non-wage real estate positions had slowed from more than 10,000 per year to less than 1,000.

Other industries with relatively large numbers of non-wage workers include business services, personal services, miscellaneous services, miscellaneous retail and special trade contractors. Of these, business services and personal services gained the greatest number of new non-wage positions between 1983 and 1987.

– Tom R. Rex
Research Manager

History lends perspective to current economy

The analysis of employment growth and sectoral change presented on pages 6 and 7 of this publication was limited to the period beginning in 1970 because of a lack of earlier employment data. Yet, a longer-term view can add perspective to current events. Thus, this article analyzes the performance of the Arizona economy since 1929, using personal income data produced by the U.S. Department of Commerce.

Specifically, misconceptions still exist concerning the behavior of the Arizona economy during times of national downcycles and the timing and ways in which the state's economy has evolved.

A review of 60 years worth of data reveals that the Arizona economy always has followed the national economic cycle, though to varying degrees. Part of the variance has to do with the degree to which Arizona's population growth exceeded the national average.

During the 1929–45 period, population growth in Arizona was not much greater than the national average. Economic growth thus was similar to the national average, including a deep decline during the depression of the 1930s (especially 1930–32), and a difficult adjustment period following World War II.

Since the war, Arizona's population and economic growth generally have greatly exceeded the national average. Between the late 1940s and early 1960s, four recessions occurred nationally. During the first three of these, the Arizona economy slowed, but did not contract. In the fourth, in 1960–61, Arizona's economic growth hardly slowed, due in large part to an overexuberant building boom much like that in the mid-1980s.

In the next national recession, in 1969–70, Arizona's economic growth slowed only modestly. Thus, Arizona developed a reputation of not suffering from recessions, a myth burst by the deep recession of 1974–75. In reality, the 1947–70 period was the aberration. The Arizona economy always is affected to some extent by national downturns and usually should be expected to fall into a recession.

Since the mid-1940s, the Arizona economy has been outperformed by the national economy at three different times: the 1974–75 recession, during the downsides of construction booms in 1963–65, and since 1987.

CHANGES IN STRUCTURE

Historically, the industrial composition of the Arizona economy was much different from the current one. Most of the changes occurred in the 1950s, however. By the early 1960s, the economic structure was much like that of today. These changes can be described primarily as shifts from agriculture and mining to manufacturing and, to some extent, construction. Most of the changes in the last 20 years have corresponded to those of the national economy, and can be summarized as a shift from usually high-paying basic industries to sometimes low-paying service-support sectors.

Basic industries maintained a share near 50 percent of the total economy through the late 1950s, even though shifts were occurring within the industries. Since then, however, the share has declined, to about 30 percent.

Summary by Industry

From around a 17 percent share through 1954, agriculture quickly declined to less than 7 percent by 1959 and since has fallen to barely more than 2 percent. Prior to the 1950s, agriculture generally followed the national economic cycle, but since then it has fluctuated at quite different times.

Though volatile, mining's share was around 10 percent into the early 1940s, then dipped to and held near 6 percent until the early 1960s before slowly declining to its current 1.5 percent share. Like agriculture, its cycles moved from being coincident with the national economy to responding to the industry's specific conditions.

After World War II, construction experienced a boom along with Arizona's population, and its sectoral share rose from 5 percent to a peak of 11 percent in 1960. It has cycled in a range slightly below this since 1960. In contrast to agriculture and mining, construction's cycles have become more predictable and more aligned with the national economic cycle. However, it has experienced significant slumps at times when national construction continued to expand in 1963–65 and since 1987, both in response to severe overbuilding.

Manufacturing was a small industry with only a 6 percent sectoral share until the late 1940s. Its most rapid growth in Arizona occurred in the 1950s, though its sectoral share continued to rise until 1966, when it peaked at 17 percent. Since 1969, however, its share has been less than 16 percent. It always has followed the national economic cycle, actually declining in every recession except 1960–61.

The share of the TCPU industry has been rather steady; a modest decline in the 1950s was the only change. The TCPU industry follows the national cycle to some extent.

Trade's share of the Arizona economy was around 18 percent until after 1970; it since has declined slightly to about 16.5 percent. Though it follows the national cycle, this industry rarely declines.

FIRE's share of Arizona's economy was only 3 percent until the mid-1950s, when it began a gradual increase to around 7 percent. Since the 1970s, it has followed the general economic cycle.

Services' share held at around 13 percent until the 1960s. Increases since then, particularly in recent years, have pushed its share to 25 percent. Though the industry follows the economic cycle, it has not declined since the Great Depression.

The government sector does not follow the economic cycle. The federal government's share, including military, has declined since the 1940s, to about 5 percent. State and local government, however, has expanded since the late 1950s, its share rising to 12 percent.

SUMMARY

While historically different from the national economy, the Arizona economy today is much like its national counterpart. Its industrial trends are comparable and it follows the same economic cycle. The main difference is that population growth is faster in Arizona, resulting in higher economic growth rates, particularly during booms when population growth is greatest.

A fast-growing area, however, needs basic jobs more than a stable area. The Arizona economy has not done well in this regard in the 1980s. An artificial and temporary construction-real estate boom gave the impression of prosperity, but the hard times of the last couple of years more accurately reflect the true state of the economy.

– Tom R. Rex
Research Manager

1987 wholesale trade census: concentration in Phoenix

Nearly 5,900 wholesale trade establishments were in business in Arizona during 1987, according to the U.S. Department of Commerce. These firms paid more than 64,600 workers $1.4 billion in wages and made sales of nearly $20.8 billion.

The increase in sales between 1987 and the previous census in 1982 was not as large as the gain in retail sales. Still, the 49 percent increase exceeded the inflation rate and the population gain during those five years.

On average, sales amounted to $3.5 million per establishment and $321,000 per employee, much larger than comparable figures for retail trade. Yet, the average wholesale trade establishment employed only 11 people, with a payroll per employee of $21,956.

Merchant wholesalers accounted for more than 80 percent of all wholesale trade establishments. The other establishments are either manufacturers' sales offices or agents and brokers. Manufacturers' sales offices employed more people on average than the other types. They also had the highest payroll per employee and the largest percent change in sales between 1982 and 1987 (see Table 1).

More than 20 percent of wholesalers were involved with groceries and related products. Other large industries included automobiles and motor vehicles, electrical goods, and professional and commercial equipment and supplies. The latter industry, along with drugs and machinery, was the fastest growing between 1982 and 1987.

The Phoenix metropolitan area accounted for more than 80 percent of the state's wholesale trade sales in 1987. Pima County's share was only 8 percent, much less than its share of the state's population.

Wholesale trade operations are heavily concentrated in the Phoenix area. The only other counties with sizeable wholesale trade industries are Coconino, which serves as the hub for northern Arizona, and Santa Cruz, which is a major gateway for trade with Mexico.

On a per capita basis, sales in Santa Cruz County easily were the highest in the state at more than $25,000. In contrast, per capita sales in most counties were only about $1,000 (see Table 2).

Within Maricopa County, wholesale trade operations are concentrated in Phoenix, though Tempe also had a greater share of sales than its proportion of the county's population. Tempe's sales were greater than those in Tucson, even though Tucson is a city nearly three times as large.

Though its population is less than 20,000, Nogales' sales were sixth highest in the state, exceeding those in Glendale and Chandler.

– **Tom R. Rex**
Research Manager

TABLE 1

1987 CENSUS OF WHOLESALE TRADE ARIZONA

	Establishments	*Sales in Millions*	*Employment in Thousands*	*Payroll per Employee*	*1982-87 % Change in Sales*
TOTAL	5,874	$20,777	64.7	$21,956	49%
Merchant Wholesalers	4,888	12,309	53.5	20,705	48
Manufacturers' sales	437	6,137	8.0	30,720	57
Agents and brokers	549	2,331	3.2	20,926	38

Source: U.S. Department of Commerce, Bureau of the Census, and the Center for Business Research, College of Business, Arizona State University.

TABLE 2

1987 CENSUS OF WHOLESALE TRADE

	Establishments	*Sales in Millions*	*Per Capita Sales*	*Employment*	*Annual Payroll in Millions*
ARIZONA	5,874	$20,776	$6,077	64,687	1,420
Maricopa	3,984	16,991	8,630	49,119	1,141
Pima	911	1,607	2,510	8,470	161
Santa Cruz	180	628	25,120	1,726	30
Yuma	159	289	3,180	1,470	25
Yavapai	110	97	1,070	538	8
Coconino	109	589	6,470	949	16
Mohave	105	107	1,340	563	9
Pinal	84	165	1,540	505	10
Cochise	71	93	940	511	7
Navajo	61	111	1,480	407	7
Gila	42	33	830	146	3
Graham	32	32	1,330	170	3
La Paz	14	17	1,210	65	1
Apache	8	13	210	34	*
Greenlee	4	3	330	14	*

* Less than $1 million

Source: U.S. Department of Commerce, Bureau of the Census, and the Center for Business Research, College of Business, Arizona State University.

Economic growth still slow in April

Modest economic gains were the rule across Arizona in April, continuing the minimal economic growth of the past one and one-third years.

In April, the coincident economic index for Maricopa County rose 0.1 percent to a revised 148.6 (see below). Pima County's index climbed 0.4 percent to 137.0 (1982 = 100); the index for non-urban Arizona also advanced 0.4 percent, to 133.0.

Except in rural Arizona, increases during the first four months of 1989 were modest. In Pima County, the index advanced just 0.3 percent. Though larger at 1.0 percent, Maricopa County's gain still was quite subpar. The main difference in the urban counties' performances was stronger employment gains in the Phoenix area. In contrast, the index for rural Arizona rose 1.8 percent, more than its historical average. The unemployment rate declined more than in the non-urban counties, reaching the lowest level in April since August 1984 (8.3 percent).

TABLE 1

MONTHLY PERCENT CHANGE COMPARISON

	Maricopa		*Pima*		*Non-urban*	
	Original	*Revised*	*Original*	*Revised*	*Original*	*Revised*
January 1988	.5%	–.3%	–.1%	–.7%	0%	–.5%
February	0	.1	.2	.2	–.2	.2
March	.2	.4	–.2	–.2	.5	.8
April	–.4	–.4	–1.2	–1.2	–1.4	–1.4
May	.2	.2	–.8	–.9	–.3	–.1
June	–.3	–.5	.4	0	0	–.2
July	.8	.6	.3	.2	–.7	–1.0
August	.1	.3	.2	.5	.2	.5
September	–1.2	–1.1	.2	.3	.3	.7
October	.6	.2	.8	.9	1.2	1.2
November	1.4	.7	1.8	1.0	2.2	1.4
December	.9	.5	.6	.3	.5	.3
January 1989	.3	.3	.1	.2	.4	.5
February	.3	.5	–1.0	–.8	–.2	0
March	.2	.1	.7	.5	1.1	1.0
April	—	.1	—	.4	—	.4

Source: Center for Business Research, College of Business, Arizona State University.

TABLE 2

ANNUAL PERCENT CHANGE COMPARISON

	Maricopa		*Pima*		*Non-urban*	
	Original	*Revised*	*Original*	*Revised*	*Original*	*Revised*
January 1988 ...	6.6%	4.6%	6.2%	4.8%	5.0%	3.5%
February	6.6	4.8	6.0	4.4	4.3	3.3
March	6.2	4.7	4.7	3.5	4.9	4.1
April	4.6	3.5	3.1	2.4	2.9	2.6
May	4.2	3.3	1.6	1.1	2.1	2.0
June	3.9	2.6	1.4	0.0	3.4	3.4
July	3.3	2.3	1.1	–0.2	2.3	2.5
August	3.2	2.2	1.3	0.4	1.7	2.0
September	1.6	1.0	0.6	0.1	1.1	1.8
October	0.9	0.1	0.7	0.1	0.6	1.2
November	2.7	1.0	1.7	0.4	3.0	2.7
December	2.9	0.9	2.3	0.6	2.4	2.0
January 1989 ...	2.7	1.5	2.5	1.5	2.8	3.0
February	3.0	1.8	1.3	0.5	2.7	2.9
March	3.0	1.4	2.2	1.1	3.4	3.0
April	—	2.0	—	2.8	—	4.9

Source: Center for Business Research, College of Business, Arizona State University.

Retail sales fell by roughly equal amounts across the state in April. Employment also declined in each area, though by more in non-urban Arizona. The overall index gains came from commercial building permits and the unemployment rate. Maricopa County's improvement in the value of commercial building permits was slight, reaching its second lowest value since the 1981-1982 recession. The improvement in the unemployment rate was sharper in rural Arizona.

The composite index for Arizona rose 0.2 percent in April to 143.8. Its gain during the first four months of the year was 1.0 percent.

Preliminary data for May show another month of sluggish employment growth, but another surprising improvement in the unemployment rate, with a particularly large drop in the Phoenix area. As a result, the coincident indexes probably rose at average to above average rates.

REVISION

The entire history of the coincident economic indexes was revised by reducing the relative importance of the unemployment rate component from .33 to .16, and increasing the weight of the employment component rising from .33 to .50. In addition, the standardization factors (the average monthly change in the seasonally adjusted series of each of the four components) were updated.

Beyond the topics discussed in the March 1989 issue, the unemployment rate continues to exhibit unusually large monthly fluctuations. Further, the year-end revisions have been substantial in recent years.

The revised indexes smooth out both monthly and longer-term fluctuations, particularly in the urban counties in the last three or four years. Monthly differences in growth rates since the beginning of 1988 are shown in Table 1; their net effect has been to lower the annual growth rates in the urban counties (see Table 2).

– **Tom R. Rex**
Research Manager

Arizona leading index dropped in May

The Arizona Index of Leading Economic Indicators decreased in May to 116.9. The May number was 1.1 percent lower than the revised 118.2 number for April 1989 and 3.0 percent below the May 1988 number of 120.5 (1982 = 100).

Money supply, sensitive prices, inventories, hours worked, new orders, delivery times, production and residential building permits had a negative impact. Employment from the purchasing survey was unchanged this month.

OUTLOOK

The drop in the money supply accounted for a large part of the fall in the index this month; however the fact that eight out of the nine indicators were negative in May is definitely cause for concern. The Arizona economy will also be influenced by the slowing of the national economy. The index has yet to give a clear signal of recession but is pointing to even slower growth in the months ahead.

– **Tracy L. Clark,** *Economist*
Economic Outlook Center

The Arizona leading index is based on 9 economic indicators, combined and weighted to project the pace of economic activity several months ahead. Five of the components come from a monthly survey of Arizona purchasing managers conducted by Dr. Harold Fearon. The Arizona Index of Leading Economic Indicators is sponsored by Citibank (Arizona).

TABLE 1

NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution'			
	Feb.	*Mar.*	*Apr.*	*May*
Delivery Time*	–.02	.09	–.05	–.09
Inventory Levels*	.02	–.09	.08	–.14
New Orders*	–.07	.12	.09	–.11
Production*	–.09	.09	.08	–.08
Employment*	–.06	.08	–.05	.00
Residential Building Permits	–.35	.32	–.40	–.03
Average Workweek, Manufacturing	.03	.00	–.07	–.14
Money Supply	–.14	–.08	–.32	–.41
Change in Sensitive Materials Prices	.00	.10	–.07	–.15
OVERALL INDEX CHANGE (%)	–.69	.62	–.69	–1.15

' The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the Purchasing Management Associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

Purchasing indicators show little movement in June

The Arizona economy slid into the summer, with its second month of slow/no growth. The bad news is that new orders received, production, and employment were at a standstill, as almost all the punch has left the economy. The good news is that the inflation rate, which has followed a declining trend over the first half of the year, continues to come down as the actions of the Federal Reserve to defuse upward price pressures have met with some success.

For an economy that enjoyed over six years of economic expansion (beginning January 1983), Arizona is doing surprisingly well. Excesses have developed, but the correction process has been underway for the past half year. Although the last half of 1989 may see a few months of overall economic contractions, with inflationary pressures largely wrung out of the economy, further reductions in interest rates should put the Arizona economy back on a moderate upward growth trend by the end of the year.

– **Harold Fearon**

TABLE 1

JUNE PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (June compared to May)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	33	61	6
Delivery time from vendors	20	73	7
Purchased materials inventory level	31	34	35
New orders received	34	33	33
Production	30	39	31
Employment	27	47	26
Purchases	40	29	31

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

ARIZONA ECONOMIC INDICATORS

					Year-to-Date	
	Month or Quarter	*Value*	*Percent Change from Previous Period*	*Percent Change from Year Ago*	*Value*	*Percent Change from Year Ago*
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	4th Qtr.	61.103	1.7	5.0	NA	NA
Arizona - 1982 Dollars	4th Qtr.	48.005	0.0	0.9	NA	NA
COINCIDENT ECONOMIC INDEXES (1982 = 100)						
Arizona	April	143.8	0.2	2.5	NA	NA
Metropolitan Phoenix	April	148.6	0.1	1.9	NA	NA
Metropolitan Tucson	April	137.0	0.4	2.8	NA	NA
Non-urban Arizona	April	133.0	0.4	4.9	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	2nd Qtr.	125.9	1.8	5.0	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1982 = 100)						
Arizona	May	116.9	−1.1	−3.0	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	April	140,207	−45	−60	846,181	−21
Pima County	April	25,749	−17	−41	113,297	−37
Balance of State	April	71,096	10	35	228,534	10
Arizona	April	237,052	−32	−46	1,188,012	−18
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	April	1,008	−34	−63	4,600	−39
Pima County	April	219	−20	−52	858	−63
Balance of State	April	989	22	31	3,411	7
Arizona	April	2,216	−15	−44	8,869	−32
HOME SALES						
Maricopa County - Number	May	4,560	19	−14	18,820	−6
Maricopa County - Median Price	May	79,900	1.1	1.1	79,900	0.1
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	1st Qtr.	88	−3.3	0.0	NA	NA
Metropolitan Phoenix - Resale Homes	1st Qtr.	124	0.8	2.4	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	June	10.1	−5.6	−2.9	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	1st Qtr.	2,048	0.5	2.0	NA	NA
Arizona	1st Qtr.	3,550	0.5	2.0	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	April	3,443	6.6	15.6	13,283	7.8

NA = Not Applicable

Source: Center for Business Research, Arizona Real Estate Center, and Economic Outlook Center, College of Business, Arizona State University.

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Arizona's sick economy - a synopsis

How, why, prognosis

By the summer of 1989, the weakness of the Arizona economy had become reasonably well accepted following a long period of denial. The prospect of continued slow growth for perhaps three to five more years was no longer a novel thought, though some, including a few economic forecasters, clung to the notion of a sooner, stronger recovery.

This article attempts to comprehensively, yet briefly, describe what happened to the Arizona economy, and in doing so, predict what is likely to occur in coming years. It pieces together information from a variety of articles, including one of the earliest predictions of the length and severity of the economic slowdown (*Arizona Business*, January 1988, pp. 9–10).

BACKGROUND

A variety of economic/demographic facts are important in understanding the current economic situation.

First, Arizona's economic and employment growth precedes its population growth by several months, thus is the preeminent factor to consider. The rate of population growth does feed back as a factor determining economic growth, however. (See *Arizona Business*, February 1989, pp. 1–4, for more details).

Second, not all jobs are equal (*Arizona Business*, August 1989, pp. 6–8). Besides the wage paid, the status of the job as basic or service-support is important. Basic industries — those that import money into Arizona in some way — include farming, mining, manufacturing, part of construction, tourism, federal government and military. Manufacturing is a classic example, because of its status as a fairly large, high-paying, goods-producing industry. In Arizona, because of rapid growth, construction takes on unusual importance; of all industries, it has the longest lead time and strongest relationship with future economic and population growth. Thus, manufacturing and construction probably are the two most important industries to watch.

Third, the structure of the Arizona economy is similar to the national economic makeup, but with a key difference. Arizona's manufacturing industry is relatively small, concentrated in a few high-tech sectors. This small size is compensated by a large construction industry, particularly in the urban areas.

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Fourth, economic and employment growth, and subsequent population gains, are highly cyclical. The Arizona economy closely follows the cycles of the national economy. However, local conditions can cause additional perturbations. Thus, not all cycles are the same. In particular, the current downcycle should not be compared to a typical downturn. Instead of being driven by national-international factors, the current slump was self-imposed (detailed later in this article).

Fifth, economic cycles — more severe in Arizona than elsewhere — are exaggerated by swings in community sentiment. This is most easily seen in variations in long-term population projections (*Arizona Business*, November 1988, p.3).

A SHORT HISTORY

The Arizona economy, coincident with the national economy, suffered through a recession in 1981–82. As is typical, job losses occurred in manufacturing and construction. For a short time, even the service-support sectors lost jobs.

As usual, the construction industry led the economy out of the recession. However, instead of being initially concentrated in the residential sector as in prior recoveries, commercial construction took off as well, in response to a federal tax law change in 1981.

The early part of the economic expansion, in 1983–84, was centered on the construction, manufacturing and service-support industries. Other basic industries — farming, mining, federal government — continued to experience problems that had begun in the early 1980s.

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By 1985, job growth in manufacturing tailed off as well, a worldwide recession in semiconductors and related products being the initial trigger. Arizona's boom was maintained almost strictly by construction/real estate and closely allied sectors. Despite the fastest economic and population growth on record, at least in the Phoenix area, warning signals — mostly in the form of rising vacancy rates — were already flashing. Community sentiment, however, pushed the boom along as optimism became stronger and more prevalent. Most of the community lost sight of reality and basic economic/demographic concepts, such as supply and demand. The hole in which the Arizona economy is now trapped was dug in the 1984–86 period.

The economic growth rate slowed somewhat through 1985 and 1986, but population growth remained very high. In 1986, construction's expansionary phase ended, stalled by very high vacancy rates and another change in federal tax laws. By this point, job creation in the basic industries slipped to only a few thousand (see Figure I). Economic growth was sustained by generally average-to-low-paying service-support sectors, particularly real estate.

As the construction slowdown intensified and the traditional time lag between employment and population passed, population growth slowed markedly in 1987. Net job creation in basic industries deteriorated further, ranging from barely positive to negative. Conditions stabilized for a few months, however, making the subsequent collapse all the more shocking.

The Arizona economy in 1988 was hit by numerous employee layoffs in a variety of industries, driving total job creation down to barely positive levels (see Figure II). Most of the job losses were in construction and real estate, though associated industries such as finance and public utilities also were hard hit. Though the slowdown began in 1986, many firms apparently held on as long as they could, hoping that conditions would improve and that downsizing and layoffs could be prevented. By 1989, construction had lost about 26,000 jobs from its mid-1986 peak, one-half of the number it had gained since the 1982 recession trough. Real estate positions — particularly non-wage and salary — probably were 20,000 more numerous by 1987 than could be sustained.

In addition, a number of major manufacturing firms announced layoffs in 1988. Most were in response to reductions in federal defense spending; much of Arizona's high-tech sector has government defense applications. After 1981, manufacturing had only a brief period of reasonably strong growth in 1983–84.

PRESENT SITUATION

Now that the dust has settled, it is clear that the boom of the mid-1980s was deceptive. It was impelled by an unsustainable construction-real estate binge that never was market-driven. Had this not occurred, the Arizona economy would have experienced slower growth than normal for an expansionary period, especially in 1985–86. The other basic industries simply were not contributing much to the state's growth.

Today's economic problems are twofold. First, the obvious fallout and inevitable decline from the overexuberant construction-real estate activity not only has affected those industries, but has rippled through the economy to affect virtually all service-support industries. Second, however, is the continuing weakness in nearly all of the other basic industries. Nothing is driving the Arizona economy.

Thus, Arizonans are faced with a long list of unappealing conditions, with few, if any, options available to achieve much improvement in the near-term. Overbuilding created high vacancy rates, which despite substantial contractions in new activity in many construction sectors, has left most vacancy rates stable or still rising. With supply and demand still far out of equilibrium, and considerable properties repossessed or otherwise in distress, huge pressures have been building on prices.

While the banking industry cannot be described as healthy, its condition is far better than that of savings and loans. Federal regulators control so many assets that they have considerable control over the fate of the Arizona real estate industry.

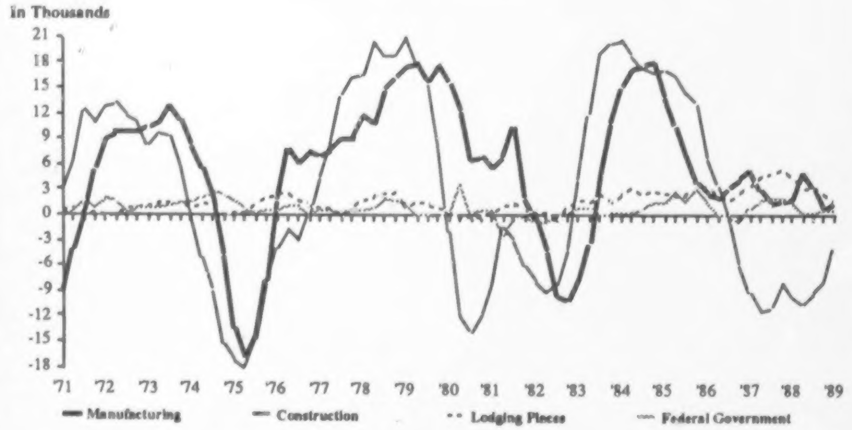
Business failures have not been limited to financial institutions. Record, yet still rising, levels of bankruptcies, foreclosures and business failures pervade Arizona.

With all of these problems, annual job growth dropped well below 20,000 during late 1988, though it has since recovered back to the 20,000 to 25,000 range. While still quite weak, the economy in 1989 is not doing as poorly as in spring-summer 1988. The net increase in basic jobs still is near zero, but job growth in other industries is positive, as it nearly always is.

Much of the Arizona workforce has been little affected by local conditions, meaning that their incomes have continued to rise. (Despite little job growth, manufacturing's personal income and gross product have continued to expand at moderate rates). Further, in-migration of retirement-age population and net natural increase have hardly slowed. These conditions are sufficient to keep the economy expanding, al-

FIGURE I

BASIC EMPLOYMENT – SELECTED INDUSTRIES
ANNUAL JOB CREATION



Source: Center for Business Research, College of Business, Arizona State University from Arizona Department of Economic Security data.

beit slowly, both in a historical perspective and in a national comparison.

A HISTORICAL PRECEDENT

The current episode is not unique in Arizona's recent history. Twenty-four years earlier, a similar cycle played out. Overbuilding, though restricted to residential real estate, accompanied by overoptimism and very high population projections characterized Arizona in the very early 1960s. The result was very high vacancy rates and a construction recession that, beginning in 1963, rippled through most of the economy.

The overbuilding was aggravated by the demographic cycle. Migration is largely a phenomenon of young adults, but the number of potential migrants declined in the 1960s because of low birthrates in the 1930s and early 1940s. This led to a slowdown in growth in the Sunbelt states; in Arizona it also meant fewer people available to absorb the excess housing units.

A similar situation aggravates today's problems. The baby-boom generation of 1946–64 meant a peak in young adults occurred in the mid-1980s. For years, the number of potential migrants will drop, resulting in less economic stimulus and less need to build dwelling units, particularly apartments and starter homes.

The 1960s period of slow growth lasted five years, occurring at a time when the national economy, including its construction industry, continued to perform well. The current downcycle, which began in 1987, could well last longer than five years, however. A key difference between the 1960s and 1980s slowdowns cannot be ignored. In the 1960s, growth in other basic industries, especially manufacturing, remained moderate to strong. Thus, the 1960s slow-growth period never was as severe as that experienced since early 1988.

THE OUTLOOK

Basic industries are the key to the Arizona economy's near-term course.

Manufacturing

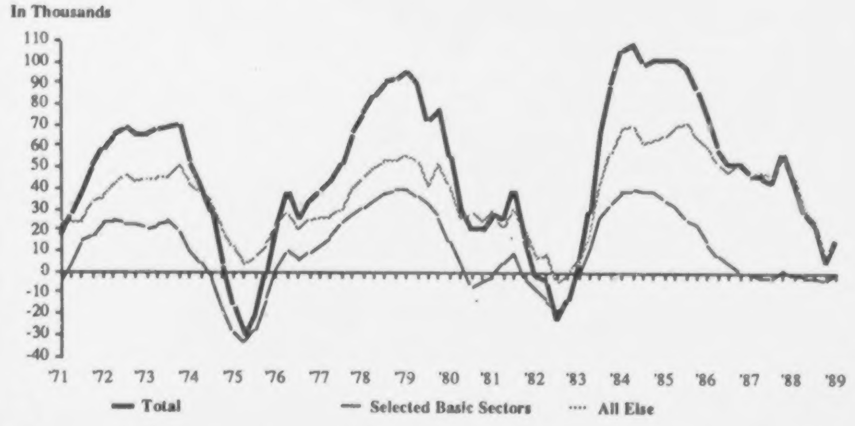
Arizona's manufacturing industry remains plagued by layoffs. While defense procurements may stabilize, ending the job losses, a recovery is unlikely in the foreseeable future. Other manufacturing sectors — non-defense high-tech and dollar-sensitive export industries — are on downsides of booms, thus are unlikely to step up hiring at this late date. On net, manufacturing employment gains could accelerate modestly from the 2,000 per year level of recent years, but not enough to have much noticeable impact on the Arizona economy.

Tourism

A surge of resort construction resulted in fast growth of tourism jobs in recent years. Continued strong, but not better, performance is predicted for tourism. Thus, Arizona will be lucky if the industry continues to provide the stimulus it has had in recent years. Further, tourism has less impact than most basic industries because of its low wages.

FIGURE II

WAGE AND SALARY EMPLOYMENT ANNUAL JOB CREATION



Source: Center for Business Research, College of Business, Arizona State University from Arizona Department of Economic Security data.

Federal Government

Federal employment gains, including military, generally have been modest throughout the 1980s. Federal deficits and conservative politics suggest this situation will not change in the next few years.

Mining and Agriculture

Each industry has stabilized in the last couple of years, following losses through the mid-1980s. It would be highly optimistic to think that these small industries could improve to the point of having a significant impact on the state's economy.

Construction

Given high vacancy rates, low absorption and poor prospects in other industries, the chance of a recovery in this industry in the next couple of years is extremely slim. Further declines may not necessarily occur, but are possible in certain sectors. Vacancy rates should act as a leading indicator for this industry. They have a long way to drop before activity can accelerate appreciably.

Service-support

Declines in finance, real estate and public utilities may cease, but a recovery likely is well into the future. State and local government employment gains should remain modest. Services and trade should continue to create jobs at a moderate pace, but improvement in these sectors for the most part must wait until basic sector gains occur.

Summary

Removal of some of the negatives present during the last one and one-half years should have the effect of slightly raising economic growth figures. But gains will still be quite slow, with little hope for much more improvement in the next two years.

Significant downside risks are present, however. First, deterioration of national economic conditions would have a depressing effect on the local economy. The chance of an economic recession in 1990 or 1991 cannot be dismissed. This would delay the onset of a strong recovery locally for another year, to about 1993.

Second, further worsening of local economic conditions could still occur. The Arizona Index of Leading Economic Indicators generally has been declining for months, signalling that economic conditions should weaken even more. Moreover, serious further deterioration of the real estate market could occur, usually expressed as a result of "dumping" of assets by federal regulators. Even without dumping, conditions could get worse before they get better.

Eventually, the construction-real estate sectors will reach equilibrium, fueling another economic expansion. By then, chances are good that other conditions will have changed. Gains in employment of existing manufacturing firms, an influx of new firms to the state, and/or an increase in federal spending may occur. If so, another strong economic expansion should result, but probably not until around 1994. Betting that such strength will be present prior to 1992 likely will be a losing proposition.

WHAT TO DO

For the Arizona economy to noticeably improve its performance in less than two-to-four years, it likely will need to attract more relocating firms than it already does. While a somewhat convincing rationale has been advanced for such moves — especially from California — the issue is more complex than stated (*Arizona Business*, February 1989, pp. 3–4). The current chances are small that enough firms will move in to stimulate the economy out of its malaise. The odds could be improved by certain actions, though even then not too much should be expected. But economic development — the old strategy of attracting relocating firms — seems to be the only hope.

Factors influencing corporate relocations and new plant sitings vary case by case, but some generalities can be made. Of greatest significance is the fact that the most important factors influencing manufacturing/distribution sitings are much different from those of headquarters, research and development, and high-technology facilities.

In the former case, Arizona compares favorably, as reflected by its rankings in most business climate studies, though some factors, such as proximity to customers, are beyond the state's control. If Arizona has not benefited from relocated manufacturing and distribution facilities as much as desired, it is probably due to a combination of factors, including its geographical location. In addition, fewer domestic relocations are occurring at the same time that competition for these firms is becoming greater and more sophisticated. Further, the state's economic development efforts may be deficient, by being fragmented and parochial, for example. Since last December, some action has been taken in this regard.

In the case of headquarters/R & D/high-tech operations, Arizona does not compare as favorably. First, two of the highest-ranked factors are out of the state's control: proximity to other company facilities and personal preferences of company executives.

Second, the top-ranked factor is quality of life, on which Arizona does not rank very high (40th in the Grant-Thornton business climate study, for example). At the top of the list of quality of life issues is education, followed by the environment. Education has a role in a couple of other factors as well — availability of professional and technical workers and proximity to a university.

Over and above any activities already underway to enhance the state's economic development is the need to improve the state's quality of life. Instead of positively addressing this issue, the state's inaction, budgetary problems and general unwillingness to spend effectively is causing the state's comparative quality of life to deteriorate.

– Tom R. Rex
Research Manager

Maricopa County dominates economic activity

Maricopa County's share of Arizona's economic activity is higher in most categories than its share of population. In 1988, 58 percent of the state's residents lived in the Phoenix area, but generally more than 67 percent of Arizona's economic activity occurred in its largest urban area. The Tucson area's share of population was 19 percent, but most economic portions were smaller. The 13 rural counties as a whole accounted for 24 percent of the state's population, but their economic shares frequently were less than 15 percent.

In no category did Pima County's share exceed 24 percent; the high was for 1988 federal expenditures. In a few cases, the Tucson area's share was less than 10 percent: wholesale trade sales in the 1987 economic census, 1987 agriculture gross product and earnings, and several types of 1988 building permits, including commercial and industrial dollar values.

Shares of economic activity in rural Arizona were more variable. Approximately one-half of the state's agriculture and three-fourths of its mining, whether measured by gross product, earnings or employment, can be traced to the rural counties. More than one-third of the federal government's presence — civilian and military — is outside the urban areas. In addition, 85 percent of the new mobile homes authorized in 1988 were in the rural counties.

In contrast, the rural area's share of most of the state's other economic activity was less than 15 percent, including that of the manufacturing, construction, services and FIRE (finance, insurance and real estate) industries. Rural area trade also is a relatively small proportion, especially wholesale.

The only categories in which Maricopa County's share is much below its 58 percent population portion is mining, building permits for mobile homes and two-to-four unit dwellings, and to a lesser extent, agriculture and federal government. It has a disproportionately large share of nearly all other economic activity.

– Tom R. Rex
Research Manager

Net migration figures still weak in second quarter

Net in-migration to the Phoenix area was approximately 6,000 in second quarter 1989, up a bit from the first quarter estimate of 5,000. However, in six of the nine latest quarters, net in-migration was between 6,000 and 8,000, well below the 11,000 per quarter long-term average.

Coupled with net natural increase, the total change in the Phoenix area population during the second quarter was 11,000. Statewide, the gain was approximately 20,000, split evenly between net migration and net natural increase. Annual changes were smaller than in the prior fiscal year (see Table 1).

NATIONAL MIGRATION

According to the Current Population Survey (CPS) conducted annually by the U.S. Bureau of the Census, the percent of the population moving from state to state has not changed much during the 1980s. However, though stable, the interstate mobility of the population in the 1980s has been less than historical figures.

Despite somewhat lower rates of migration, the number of interstate movers has not declined because of the constantly increasing size of the U.S. population. The annual number of interstate movers has been in the six to seven million range ever since 1963.

By Age

The CPS shows that mobility of all types is highest for young adults. For interstate migrants between 1986 and 1987, peak flows as a percentage of the population occurred for those aged 22 to 25, at approximately 6 percent. The entire 19 to 30 age bracket experienced flows of at least 4 percent. The next highest rates were for children three years old or younger, illustrating the movement of young families with parents aged in their 20s.

Beyond the age of 30, the percentage of people moving quickly declines with age, with rates dropping quite low beyond the age of 40. No upsurge occurs at retirement age; in fact, after remaining relatively stable between the ages of 45 and 63, the migration rate drops further at older ages, to less than 1 percent.

Interstate migration rates over the past four decades have not varied widely, but were clearly higher than average from 1963 into the early 1970s, and lower in the 1980s. The variation was least for older adults, but rather small for all ages older than 35. Little variation also was seen in the teenage, under 18, group.

Considerable variation in interstate migration rates has occurred over time among those aged 18 to 34, especially 20 to 24, and children less than 5 years old. The annual average rate of those between 20 and 24 was less than 6 percent in the 1980s, compared to 8 to 10 percent throughout the 1950s and 1960s.

These wide differences in migration rates can be explained by cohort size. Higher rates occur when the number of young people is relatively small, as occurred among those born in the 1930s and early 1940s. In contrast, the size of the baby-boom generation caused rates to be lower in the 1980s.

By Region

While total interstate mobility has been relatively constant, variations in regional flows have occurred in response to changing economic conditions. Net outflows from the Northeast became larger in 1986 and 1987, as inflows were lower and outflows higher than at any time in the 1980s. In contrast, net outflows from the Midwest had declined to minimal levels, corresponding to the area's industrial boom. This improvement largely came at the expense of the South.

In the West, migration flows in the 1980s were erratic, but no trend or cycle was discernable. During the same period, Arizona's migration flows were extremely cyclical, corresponding to the cyclicality of its economy. This illustrates that cyclical economic conditions are far more important in Arizona than elsewhere in determining the state's migration flows.

OUTLOOK

Given employment changes that already have occurred, migration flows in the third quarter should be similar to those in the second quarter, with net in-migration perhaps 1,000 higher in the Phoenix area. After that, however, the outlook worsens.

Construction employment is again declining, after brief stability in late 1988, and employment in other sectors, such as public utilities, finance and real estate, still shows weakness. In addition, frequent, sizeable declines in the Arizona Index of Leading Economic Indicators suggest that employment and economic gains will soften in coming months. At best, they will continue at present rates through early 1990. However, June's employment loss indicates that this slowdown has already begun.

Thus, net in-migration to the Phoenix area likely will remain around the 6,000 to 7,000 range of recent quarters, with occasional lower figures possible. The population figures presented in the February 1989 issue are updated in Table 1. The main difference is the downward revision in Maricopa County's net migration projection for mid-1989 through mid-1990. At this point, little reason exists to suspect that flows from 1990 to 1991 will be much different.

– Tom R. Rex
Research Manager

TABLE 1

POPULATION ESTIMATES AND PROJECTIONS
(In Thousands)

Fiscal Year	*Arizona*	*Maricopa*	*Pima*	*Non-urban*	*Arizona*	*Maricopa*	*Pima*	*Non-urban*
	Total Population				**Change**			
1988^E	3,497	2,015	654	828	78	46	13	19
1989^E	3,570	2,059	664	847	73	44	10	19
1990^P	3,651	2,108	676	867	81	49	12	20
	Net Natural Increase				**Net Migration**			
1988^E	37	22	6	9	42	24	7	11
1989^E	38	22	6	10	35	22	4	9
1990^P	39	23	6	10	42	26	6	10

E = estimate P = projection

Source: Center for Business Research, College of Business, Arizona State University.

Second quarter home sales, prices up slightly

Mortgage rates, seasonality, larger homes responsible

The Maricopa County residential real estate market is now obviously in a recessionary cycle. However, the current slowdown in construction activity is what the area needs for future strength, given the condition of the economic and real estate markets.

Residential sales have halted their downward trend of the past year; sales increased slightly during second quarter 1989, but were considerably below the number sold during second quarter 1988 (see Table 1). The increase from first quarter 1989 was due primarily to the typical seasonal pattern and lower mortgage rates, rather than the beginning of the "recovery" of the housing market.

The median price of all single-family homes sold during the second quarter was higher than those sold during the prior quarter and during first quarter 1988. However, the higher price level was due to an increase in the size of the typical home purchased; the median price-per-square-foot of the homes sold did not rise.

NUMBERS OF SALES

The number of new single-family homes sold during second quarter 1989 totalled 2,260, up 4 percent from the prior quarter, but 22 percent lower than second quarter 1988. Existing home sales increased 10 percent from the prior quarter, but fell short of second quarter 1988 by 20 percent.

The number of townhouse/condos sold surged 8 percent from first quarter 1989's low level, but was 19 percent under the volume sold during second quarter 1988. Sales of new condos have been particularly weak during 1989.

Mortgage interest rates strongly impact home sales; during the last year, the number of homes sold has closely correlated with changes in the mortgage rate, with home sales slightly lagging mortgage rate changes (see Figure I). Mortgage rates are expected to remain low, enhancing the affordability of homes and therefore increasing the level of sales.

PRICE, SQUARE FOOTAGE, AND PRICE-PER-SQUARE-FOOT COMPARISONS

In general, the median price of new single-family homes has been relatively steady since first quarter 1988, ending slightly lower during second quarter 1989 at $104,456. The median square footage has remained fairly level (1,784 during second quarter), with a slight upward trend, resulting in a median price-per-square-foot of $58.75, 1 percent lower than in second quarter 1988.

Median price fluctuations have been slightly larger for resale single-family homes. The median price increased 6 percent from first quarter 1989 to second quarter 1989, to $79,356; however, the change from second quarter 1988 was only 2 percent. The median square footage has increased slowly to 1,520 square feet, resulting in a median price-per-square-foot of $53.50 during the second quarter, equal to the same quarter of the prior year. A greater proportion of the resale homes which sold during the second quarter were larger homes, and were more expensive due to the increased square footage.

The median price of existing townhomes has fallen each quarter since mid-1987, ending at $58,480 during second quarter 1989, down 6 percent from one year ago. The median resale townhome contained 1,125 square feet, and sold for $52.00 per-square-foot, down from $54.20 during the same quarter last year.

Prices have dropped more dramatically and more recently for new townhomes, displaying a change in the type of home being purchased. More new townhome buyers are purchasing smaller, less expensive homes. The median price during second quarter 1989 was $71,470, 14 percent lower than the prior quarter; the median townhome measured 1,125 square feet, 14 percent smaller than the prior quarter.

Notwithstanding new townhouses, many homebuyers seem to be purchasing slightly larger homes with more amenities, exerting upward pressure on the median price of all homes sold. However, the slow real estate market, as well as the increasing number of distressed properties (such as foreclosures) exert downward pressure on the price of an individual home. Many foreclosed homes have not yet entered the market, and hopefully will not be "dumped" in a short period of time, or sellers of existing homes may find it even more difficult to

TABLE 1

METROPOLITAN PHOENIX HOME SALES

	Single-family			**Townhouse/Condominium**			
Median Sales Price	*Resale*	*New*	*Total*	*Resale*	*New*	*Total*	*Grand Total*
First Quarter 1988	77,000	105,000	84,500	62,000	80,000	65,000	80,000
Second Quarter 1988	77,500	100,890	84,260	61,900	80,700	65,500	80,500
Third Quarter 1988	78,500	104,540	85,580	61,100	85,120	65,000	82,000
Fourth Quarter 1988	77,500	105,300	87,000	60,000	87,000	65,000	83,010
First Quarter 1989	75,500	105,290	84,500	58,780	83,110	62,000	80,000
Second Quarter 1989	79,360	104,460	85,960	58,480	71,470	61,900	81,500
Number of Sales							
First Quarter 1988	6,170	1,930	8,100	1,570	400	1,970	10,070
Second Quarter 1988	8,290	2,910	11,200	1,980	540	2,520	13,720
Third Quarter 1988	8,080	3,070	11,150	1,960	510	2,470	11,620
Fourth Quarter 1988	6,310	2,990	9,290	1,680	510	2,190	11,480
First Quarter 1989	6,020	2,180	8,200	1,570	310	1,880	10,070
Second Quarter 1989	6,630	2,260	8,890	1,640	390	2,030	10,920

Source: Arizona Real Estate Center, College of Business, Arizona State University, from data supplied by Real Estate Evaluation Group sell their homes without agreeing to significant price cuts.

FORECAST

The future of residential real estate in the Valley is affected by many factors, both local and national. Before significant market improvement can occur, most of the factors which caused our current downturn must experience positive changes. Locally, crucial factors include population growth, especially net in-migration; job formation and employment growth; vacancy rates in all real estate sectors; business and personal bankruptcies; and foreclosures.

Our current low level of construction has resulted in fewer jobs and a slower real estate market, but a lower construction level is essential if the local market is to improve significantly. Vacancy rates should continue to improve slowly due to the lower level of construction, eventually allowing construction activity, employment growth, and population growth to increase.

Net in-migration is projected to be approximately 24,000 people during 1989 and 24,000–28,000 in 1990. The long-term average of 42,000 (still far less than the 1985 peak of 66,000) is not expected to be reached until around 1992 or 1993.

Employment growth will probably be slightly slower during the last half of 1989 than during the first half, begin to improve during 1990, and end the year at levels slightly higher than during the first half of 1989. Basic industries, which import money into the Arizona economy, will play the most important short-term role in Arizona's recovery.

As vacancy rates, in-migration, and employment growth begin to improve during the next one to two years, construction activity will increase modestly while foreclosures and bankruptcies decline. The local economy and the real estate market can then begin their slow recoveries, assuming the national economy does not impact the local area negatively.

National issues center around the strength of the U.S. economy — particularly inflation, mortgage interest rates, and the possibility of entering into a recession. Recessionary concerns are still valid, but the possibility of the Feds successfully pulling off a "soft landing" — wherein inflation is controlled and a recession is avoided — becomes more likely each month. Even though 1989's expected inflation of about 5 percent is greater than 1988's 4.1 percent, it is not much higher, and projections do not include significant increases.

FIGURE I

MORTGAGE INTEREST RATE VS. SINGLE-FAMILY HOME SALES
Maricopa County, 1988-89

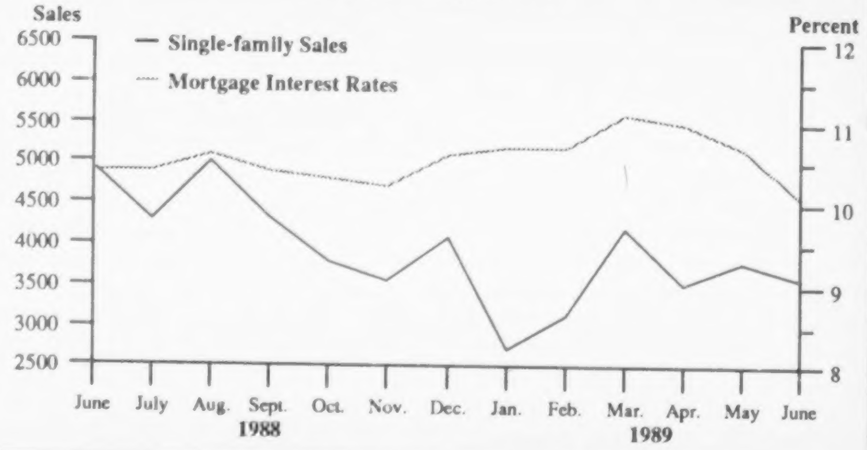
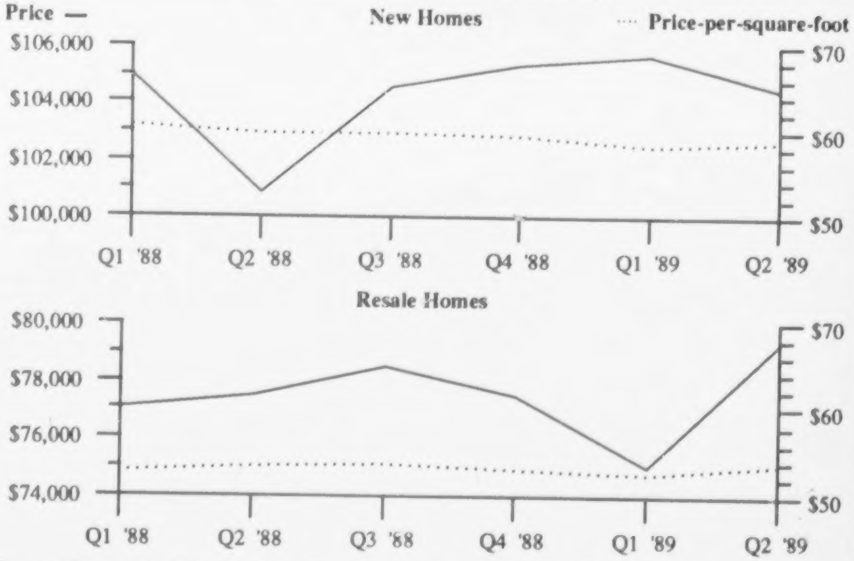


FIGURE II

MEDIAN PRICE AND MEDIAN PRICE-PER-SQUARE-FOOT
Single-family Homes, Maricopa County



Source (Figures I and II): Arizona Real Estate Center, College of Business, Arizona State University.

Local mortgage rates for both fixed-rate and adjustable-rate loans have been falling during 1989. Mortgage rates in July 1989 for 30-year, fixed-rate loans were lower than they had been since early 1987. Slightly lower rates are probable for a short time, but then rates can be expected to rise slightly, remaining lower than 1988's rates throughout 1989.

When all factors are considered, though further minor declines in construction and sales are possible, slow improvement can be expected over the next 2 to 4 years. A significant recovery can occur only when vacancy rates fall and economic conditions lead to greater levels of employment and population growth. Until then, other sectors of the economy, such as manufacturing, will need to supply the stimulus for growth.

– **Sharla Kivett,** *Research Analyst*
Arizona Real Estate Center

Services industry expanded rapidly in 1980s

Arizona's services industry grew quickly between 1982 and 1987 according to the 1987 Census of Service Industries conducted by the U.S. Bureau of the Census. During these five years, receipts of service firms more than doubled, though population growth amounted to only 18 percent and inflation totaled just 19 percent.

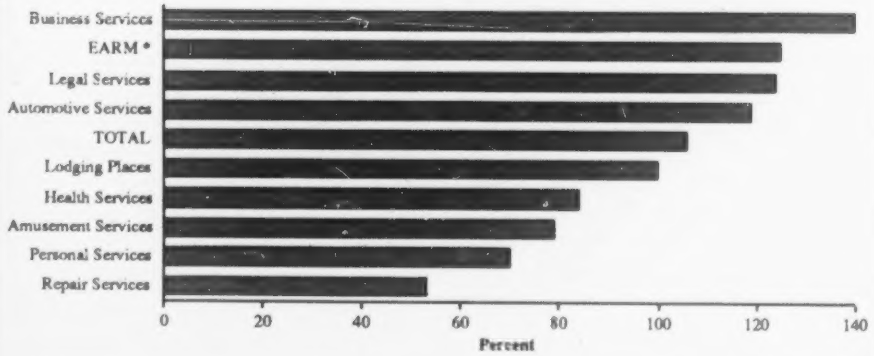
The total payroll of service firms rose even more than receipts (109 v. 106 percent). Employment advanced 62 percent, far in excess of population growth, while the average payroll per employee climbed 29 percent, translating into real salary gains. The number of establishments increased 36 percent.

These data are for firms with payroll subject to Federal income tax. Firms exempt from the tax, a much smaller number, did not expand so rapidly.

Sales of each of the major categories of the services industry increased at rates exceeding the combined population and inflation rates. Business services grew the most, with receipts rising 140 percent (see Figure I).

FIGURE I

SERVICE INDUSTRIES
1982-87 Percent Change in Receipts



*Engineering, accounting, research, management and related services

Source: 1987 Census of Service Industries, Arizona, U.S. Bureau of the Census.

TABLE 1

1987 CENSUS OF SERVICE INDUSTRIES, ARIZONA

Firms Subject to Federal Income Tax	*Establishments*	*Receipts in Millions*	*Payroll in Millions*	*Employment*
TOTAL	25,250	$10,639	4,011	243,999
Hotels/lodging places	833	1,073	302	34,345
Personal services	2,655	454	167	17,416
Business services	4,180	2,165	802	61,490
Automotive repair, services, parking	2,370	865	200	14,595
Miscellaneous repair services	968	272	83	4,774
Amusement and recreation services	1,135	524	128	14,731
Health services	6,459	2,571	1,093	43,849
Legal services	1,890	889	432	11,513
Engineering, accounting, research, management, and related services	3,593	1,497	671	29,807
Firms exempt from federal tax	2,020	3,241	1,328	75,849

Source: 1987 Census of Service Industries, Arizona, U.S. Bureau of the Census.

BY CATEGORY

Based on receipts, the largest of the services sectors was health services, accounting for $2.6 billion of the industry's total $10.6 billion. Business services was next at $2.2 billion, followed by EARM (see Table 1). Employment in business services, however, was greater than that in health services.

Receipts per service establishment averaged $421,000 in 1987. Firms in the hotels and other lodging places category were the largest on average, with $1.3 million in receipts per establishment. The lowest figure, $171,000, was in the personal services category. Similarly, employment per establishment was much higher in the lodging places category than overall (41 v. 10). Miscellaneous repair services employed the fewest workers per firm (5).

The sectoral ranking of receipts per employee, however, was much different, with legal services leading the categories at $77,000, considerably more than the $44,000 average. Personal services again were lowest at $26,000.

The average payroll per employee had a wide range, from $37,500 in legal services to $8,700 in the amusement and recreation services category. Salaries were also quite low in the lodging places and personal services groupings, but were relatively high in the health services and EARM.

BY SUBCATEGORY

More than three-fourths of the receipts in the hotels and lodging places category came from hotels, even though the number of motels greatly exceeded the number of hotels. In the personal services grouping, laundry services and beauty/barber shops were the two largest subcategories.

A number of subsectors comprise the business services category. Computer-related services was the largest. Others included personnel supply services and equipment rental.

Auto repair and auto rental are the two largest components in the auto services category. Other than electrical repair shops, no subsector of the miscellaneous repair services category is very large. The amusement and recreation services category also includes a variety of small subgroups, including movie theaters, production of movies, and commercial sports.

Doctor's offices made up more than one-half of the health services category. Because so many are non-profit, hospitals accounted for only a small portion of this category. Almost one-half of EARM's receipts came from engineering services. Accounting services and management/public relations services were also sizeable.

BY COUNTY

Service firms were disproportionately common in the Phoenix metropolitan area, with 66 percent of Arizona's establishments and 73 percent of the state's receipts. The Tucson area's share, about 19 percent, was equal to its population share, leaving smaller shares in rural Arizona than its population would suggest.

Maricopa County's 16,684 establishments employed more than 170,000 and made receipts of $7.8 billion in 1987. In Pima County, service establishments numbered 4,703, employed 48,700, and had receipts of $1.9 billion. Among the rural counties, Coconino's figures were the highest (receipts of $220 million and employment of nearly 4,900) except in number of establishments, where Yavapai led with 692. Other rural counties with receipts of at least $100 million included Yuma and Mohave.

Per capita receipts varied sharply by county. A strong relationship exists between total receipts and per capita receipts; that is, those counties with a higher concentration of service firms draw customers from outside the area. Per person figures were more than $3,900 in Maricopa County and nearly $3,000 in Pima County. In the rural counties, the figure ranged from Coconino's $2,400 to only about $100 in Greenlee County.

These per capita figures are influenced by a number of factors, including the degree of tourism, number of seasonal residents, income levels of residents, and market areas of firms. Per capita receipts are lower in rural counties not only because of low incomes, but also because population density frequently does not allow for local operation of a service business. Rural residents often must travel to larger population centers to obtain the service.

Tourism's effect was particularly seen in Coconino County, where per resident receipts in the lodging sector were about three times higher than in any other county. Amusement and recreation receipts per capita also were the highest in Coconino County.

BY CITY

Per capita 1987 receipts varied noticeably among Arizona's larger cities in 1987. Scottsdale enjoyed the highest level at $6,300, largely a result of very high receipts in the lodging category. However, Scottsdale also led or was near the top in per capita receipts in business services, health services and EARM. The city of Phoenix was next overall, at $5,400, leading the way in the legal services and business services categories. Tempe and Tucson were next, with Tempe especially high in business services and Tucson particularly strong in health services.

The lowest receipts per capita among larger cities occurred in Glendale, which ranked near the bottom in every category. Total receipts in Glendale were not that much higher than in Flagstaff, a city not even one-third the size. Mesa's per capita receipts also were relatively low, though its total receipts were fourth highest in the state, 6 percent of the state total. In contrast, Phoenix accounted for 47.5 percent of the total. Tucson ranked second at 15 percent.

– Tom R. Rex
Research Manager

Arizona's population will remain primarily White

The proportion of Arizona's population that belongs to a minority group rose only slowly between 1980 and 1985, according to experimental racial population estimates by the U.S. Bureau of the Census.

Contrary to statements that Arizona will be dominated by minority groups at some point in the not-too-distant future, Arizona's population is, and will continue to be, primarily White. While the net natural increase of minority groups is more rapid than that of Whites, most of Arizona's population growth derives from migration, which is primarily of Whites.

The Census Bureau estimates that the share of the non-Hispanic White population declined less than one percentage point between 1980 and 1985 in Arizona — from 74.2 percent to 73.4 percent. Even if this trend accelerates somewhat, two-thirds of the Arizona population will still be non-Hispanic Whites 20 years from now.

The number of Hispanics in Arizona — some 533,000 in 1985 — was eighth highest among the 50 states. The 16.8 percent share was fourth highest, but was barely higher than the 1980 share of 16.4 percent.

Arizona's Hispanic population grew less rapidly than the national average between 1980 and 1985. Much of the growth nationally came from immigration from other nations. These people settled primarily in Florida, California and New York.

Though the proportion of Hispanics is higher in Arizona's southern rural counties than in its metropolitan areas, the urban Hispanic population grew more rapidly between 1980 and 1985. In the Phoenix area, the proportion rose from 13.3 percent to 13.8 percent. Comparable figures for the Tucson area were 21.1 to 22.1 percent.

The proportion of Arizona's population that is Black rose only from 2.7 to 2.9 percent between 1980 and 1985. Nationally, the gain also was small, but the share was much larger — 12.1 percent in 1985.

The percentage growth rate of Blacks in Arizona was one of the fastest in the nation, thanks to strong net in-migration. But the numeric gain was small, as the total population was just 91,500 in 1985.

People of other races — primarily American Indians and Asians — made up nearly 7 percent of Arizona's 1985 population, up only slightly from 1980. This group, numbering approximately 220,000 people, was the eighth largest in the nation.

The growth rate of the other races category in Arizona was slower than the national average. Most of the growth nationally came from immigration of Asians from other nations, but Arizona received relatively small numbers of these peoples. A large portion of the other races category in Arizona is made up of Indians living on reservations.

– Tom R. Rex
Research Manager

Economic growth generally weak in May

Weak economic gains persisted across most of Arizona in May, according to the coincident economic indexes. The index for Pima County rose 0.2 percent for the second consecutive month (April's gain was revised down), with the index reaching 137.0 (1982 = 100). Rural Arizona's gain in May was just 0.1 percent, putting the index at 133.1. The advance in Maricopa County was much larger — 1.2 percent to 150.3 — but was misleading and followed two consecutive months of 0.1 percent increases.

The Phoenix area's large gain in May resulted primarily from the greatest improvement in the unemployment rate on record; the rate reached its lowest level since 1984. The improvement, however, probably reflects sampling error and/or unemployed dropping out of the labor force, rather than economic strength. Further, preliminary data for June show the situation deteriorated. The commercial building permit component, which contributed to May's increase, merely rebounded from very low values in March and April.

TABLE 1

COINCIDENT ECONOMIC INDEXES
Monthly Percent Change

	Maricopa	Pima	Non-urban	Arizona
January 1988	–.3	–.7	–.5	–.4
February	.1	.2	.2	.2
March	.4	–.2	.8	.4
April	–.4	–1.2	–1.4	–.7
May	.2	–.9	–.1	–.7
June	–.5	0.0	–.2	–.3
July	.6	.2	–1.0	.3
August	.3	.5	.5	.4
September	–1.1	.3	.7	–.6
October	.2	.9	1.2	5
November	.7	1.0	1.4	.9
December	.5	.3	.3	.4
January 1989	.3	.2	.5	.3
February	.5	–.8	0.0	.2
March	.1	.5	1.0	.3
April	.1[r]	.2[r]	.4	.2[r]
May	1.2	.2	.1	.9

[r] Revised

Source: Center for Business Research, College of Business, Arizona State University.

The unemployment rate improved elsewhere in the state in May, but not by as much. Employment dropped, except for a modest gain in the Phoenix area. Retail sales were little changed, as were building permits outside the Phoenix area.

During the first five months of 1989, total gains were approximately 2 percent in rural Arizona and Maricopa County, well below average for the latter area. In the Tucson area, the increase was only 0.4 percent. Improvements in the unemployment rate were the biggest stimulus, though employment rose in the Phoenix area and rural Arizona. Commercial building permits declined in the metro areas.

Preliminary data for June suggest that the coincident indexes declined statewide. Improvements in the unemployment rate were reversed and employment levels declined, especially outside the Phoenix area.

– Tom R. Rex
Research Manager

Purchasing indicators barely move in July

The Arizona economy saw only marginal growth in July, matching almost exactly the previous month's anemic performance. While new orders received and employment were only barely positive, production registered a fairly strong increase — the highest in the last three months. While production growth will help stimulate the economy, it cannot be sustained unless new order bookings pick up. The good news is that the rate of inflation continues to moderate; July saw the lowest price increase rate in more than two years (since March 1987).

Continued slow economic growth and moderate inflation can be expected over the balance of 1989. With inflation now at a stable or declining rate, due to the actions of the Federal Reserve in keeping interest rates at a high enough level to reduce demand, interest rates now can be lowered as needed to stimulate demand and avoid a recession.

TABLE 1

JULY PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (July compared to June)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	32	60	8
Delivery time from vendors	23	69	8
Purchased materials inventory level	26	39	35
New orders received	34	33	33
Production	38	39	23
Employment	26	50	24
Purchases	36	33	31

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona and the Northern Arizona Group.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona leading index moves higher in June

The Arizona Index of Leading Economic Indicators increased in June to 117.5. The June number was .5 percent higher than the 116.9 number for May 1989 and 2.4 percent below the June 1988 number of 120.4 (1982 = 100).

Residential building permits, money supply, employment, hours worked, and inventories were positive influences. Sensitive prices and delivery times were negative influences. New orders and production were unchanged this month.

ANALYSIS

The money supply was a drag on the index for nine of the last twelve months as a result of Federal Reserve efforts to cool down the national economy. This month, the money supply became a positive influence, evidence that the Federal Reserve has indeed switched gears and eased credit in an attempt to prevent a national recession. These actions by the Federal Reserve will hopefully lead to a "soft landing" for the national economy and avoid a recessionary "crash." The Arizona economy would not fare well if the national economy is thrown into a recession.

The other national indicator in the Arizona index — the change in the sensitive materials price index — has been negative for the last three months and points to a slowing of demand. In fact, falling sensitive materials prices were the major contributor to the drop in the national leading index for May and June. This two-month drop in the national leading index is considered further evidence that the national economy is cooling.

OUTLOOK

Interest rates have already fallen as a result of the Federal Reserve's easing of credit. This trend to lower interest rates is reinforced by the signing of the S&L bailout bill. Ailing thrifts which had to pay more to attract deposits will eventually be eliminated. Lower interest rates should help bolster both the national and local economies and may provide the cushion for the much sought after "soft landing." The duration and severity of any national slowdown will likely be the deciding factor in determining the course of Arizona's economy in the near future. The recent downward trend in the Arizona leading index suggests continued weakness in the state economy over the next several months, but stops short of an outright recession signal.

– Tracy L. Clark, *Economist*
Economic Outlook Center

FIGURE 1

ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

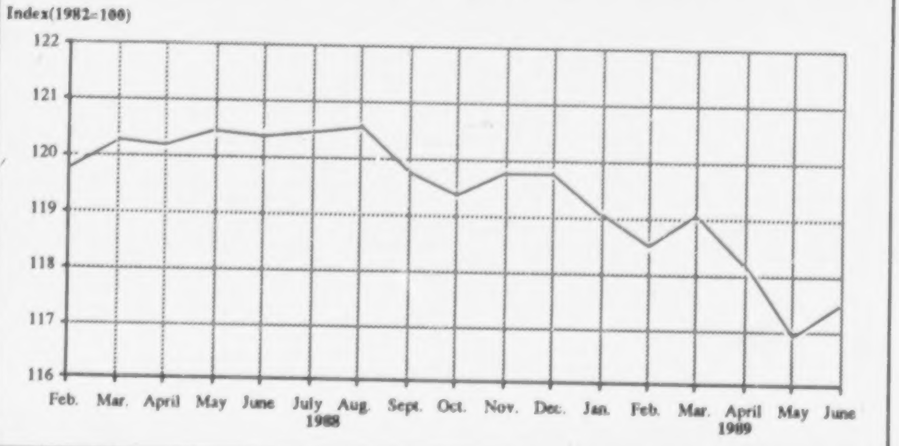


TABLE 1

NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution'			
	Mar.	*Apr.*	*May*	*June*
Delivery Time*	.09	.05	–.09	–.02
Inventory Levels*	–.09	.08	–.14	.09
New Orders*	.12	.09	–.11	.00
Production*	.09	.08	–.08	.00
Employment*	.08	–.05	.00	.12
Residential Building Permits	.32	–.40	–.03	.23
Average Workweek, Manufacturing	.00	–.07	–.10	.10
Money Supply	–.08	–.32	–.41	.20
Change in Sensitive Materials Prices	.04	–.11	–.18	–.18
OVERALL INDEX CHANGE (%)	.56	–.73	–1.15	.54

'The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the Purchasing Management Associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

The Arizona leading index is based on 9 economic indicators, combined and weighted to project the pace of economic activity several months ahead. Five of the components come from a monthly survey of Arizona purchasing managers conducted by Dr. Harold Fearon. The Arizona Index of Leading Economic Indicators is sponsored by Citibank (Arizona).

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Year-to-Date Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	4th Qtr.	61.103	1.7	5.0	NA	NA
Arizona - 1982 Dollars	4th Qtr.	48.005	0.0	0.9	NA	NA
COINCIDENT ECONOMIC INDEXES (1982 = 100)						
Arizona	May	144.9	0.8	3.3	NA	NA
Metropolitan Phoenix	May	150.3	1.2	2.9	NA	NA
Metropolitan Tucson	May	137.0	0.2	3.6	NA	NA
Non-urban Arizona	May	133.1	0.1	5.1	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	2nd Qtr.	125.9	1.8	5.0	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1982 = 100)						
Arizona	June	117.5	0.5	−2.4	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	May	241,601	19	−35	1,149,447	−20
Pima County	May	21,240	−17	−47	134,537	−39
Balance of State	May	56,563	−20	−25	285,286	1
Arizona	May	319,404	6	−35	1,569,270	−19
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	May	1,376	24	−31	6,071	−36
Pima County	May	226	21	−18	1,124	−57
Balance of State	May	901	−9	−2	4,315	5
Arizona	May	2,543	9	−22	11,510	−29
HOME SALES						
Maricopa County - Number	June	3,720	−18	−15	22,540	−8
Maricopa County - Median Price	June	82,950	3.8	2.9	80,000	0.1
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	1st Qtr.	88	−3.3	0.0	NA	NA
Metropolitan Phoenix - Resale Homes	1st Qtr.	124	0.8	2.4	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	July	9.9	−2.0	−4.8	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	1st Qtr.	2,048	0.5	2.0	NA	NA
Arizona	1st Qtr.	3,550	0.5	2.0	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	May	3,775	9.6	5.9	17,058	7.4

NA = Not Applicable

Source: Center for Business Research, Arizona Real Estate Center, and Economic Outlook Center, College of Business, Arizona State University.

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AZ economy "on hold" while US economy cools

Quarterly Economic Forecast

The national economy continues to follow a course consistent with Federal Reserve efforts to navigate the narrow channel between inflation and recession. The output of goods and services is growing at a moderate pace and there are signs that inflation is cooling somewhat. During the summer, the annualized rate of increase in the Consumer Price Index dropped below three percent for the first time in 18 months, after peaking at more than eight percent in April.

Meanwhile, second quarter growth in inflation-adjusted Gross National Product was reported at 2.7 percent. This was better than expected by some analysts who had cautioned that a recession was actually underway in the spring.

The revised rate of real GNP growth for the first half was 2.1 percent, less than half the 4.5 percent recorded for all of last year.

The Arizona economy during the first half of the year performed at a pace below the nation as a whole. National wage and salary nonagricultural employment grew 3.1 percent through June of 1989, while Arizona nonfarm job creation was only 1.3 percent. Through the first half, Arizona ranked 41st among all states in the rate of growth of employment.

THE NATIONAL SCENE

The first half of the year was marked by conflicting statements from analysts attempting to decipher the signals emanating from the economy. Optimists saw evidence supporting the "soft landing" outcome for the economy, while others suggested the Federal Reserve had overreacted and negative growth was the certain result.

Those who focus attention on the M1 money stock (currency in circulation and checkable deposits) were concerned the Fed had over-killed when this measure actually declined between February and midsummer.

M2 (M1 plus various savings and money market-type accounts) — was allowed by the Fed to grow very slowly during the winter and spring. Since then, this monetary variable, often thought to be a more revealing indicator than M1, has surged into the double-digit growth range, a move interpreted by some as evidence that the Fed feels the battle against inflation is at least temporarily successful.

Interest rate watchers claim policy changed when rates peaked in March, then fell through the late spring and summer. The three-month Treasury Bill rate dipped from 9 percent to 8 percent by July. Recently, rates have felt upward pressures as the Treasury auctioned massive new issues to finance the Federal deficit and cope with the S&L bail-out.

While the slower growth of GNP has grabbed most of the headlines, other key economic measures also leave little doubt the economy has cooled in recent months. The preliminary estimate is that the economy created 618,000 jobs during the second quarter of this year, a 25 percent decrease from the corresponding figure for the second quarter of last year, 829,000. Industrial production, which averaged gains of about 5 percent during 1987 and 1988 grew only 1 percent between the end of last year and mid-summer.

THE NATIONAL OUTLOOK

The national forecast by the Economic Outlook Center (EOC) calls for inflation-adjusted GNP to grow by 2.4 percent in 1989 and 2.0 percent in 1990 (Table 1, page 2). A recent consensus forecast of 50 economists polled by Robert J. Eggert in *Blue Chip Economic Indicators* projected only 1.6 percent real growth in 1990. Thus, the EOC forecast is consistent with the more optimistic of the Blue Chip panelists.

The EOC national scenario envisions slowing business conditions in the second half of this year as the economy exhibits a lagged response to the monetary restraint of last winter.

With no national recession in sight at this time, analysts now believe the Federal Reserve will enter an interim period during which rates will not move downward significantly. However, by the first of next year, many believe the prime will be below 10 percent.

The EOC interest rate forecast has been reduced for 1990. The three-month Treas-

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ury Bill rate is now expected to average 7.4 percent during next year, and the Aaa corporate bond rate will average 8.8 percent.

Lower rates are associated with a slightly better year for housing nationally, with 1.5 million starts. However, as the economy creates jobs at a slower pace, the national unemployment rate will move upward slightly to average 5.7 percent for 1990.

THE ARIZONA ECONOMY

Based on estimates of new jobs in the state prepared by the Arizona Department of Economic Security, the strongest sectors of the economy during the first half of 1989 were trade (up 3.2 percent) and government (up 2.8 percent). Both of these sectors are driven by increases in population, which grew in Arizona at a pace about double the national average.

Through the first half, manufacturing has been disappointing. Last year, manufacturing jobs were up by only 1.3 percent. This year, growth through the first half has been even weaker, at 0.2 percent.

The service sector, usually one of the more vigorous components of the state's economy, has turned in a similarly subpar performance during the first half. Last year, service employment was up 4.6 percent for the year. So far, the Arizona serv-

TABLE 1

1989 AND 1990 ECONOMIC FORECASTS: UNITED STATES

	Actual *1985*	Actual *1986*	Actual *1987*	Actual *1988*	Forecast *1989*	Forecast *1990*
Gross National Product						
Billions of 1982 Dollars	3,618.7	3,721.7	3,847.0	3,996.0	4,091.0	4,173.0
Percent Change	3.4	2.8	3.4	3.9	2.4	2.0
Industrial Production (Percent Change)	1.9	1.1	3.8	5.7	3.0	1.5
Net Exports (Billions of 1982 Dollars)	−104.3	−137.5	−128.9	−100.2	−91.2	−70.5
Housing Starts						
Number in Millions	1.74	1.81	1.62	1.49	1.46	1.50
Percent Change	1.7	4.0	−10.5	−8.0	−2.0	2.7
Unemployment Rate (Percent)	7.2	7.0	6.2	5.5	5.4	5.7
Consumer Price Index (Percent Change)	3.6	1.9	3.6	4.1	4.6	4.7
Three-Month Treasury Bill Rate (Percent)	7.5	6.0	5.8	6.7	7.9	7.4
Aaa Corporate Bond Rate (Percent)	11.4	9.0	9.4	9.7	9.0	8.8

TABLE 2

1989 AND 1990 ECONOMIC FORECASTS: ARIZONA

	Actual *1985*	Actual *1986*	Actual *1987*	Actual *1988*	Forecast *1989*	Forecast *1990*
Gross State Product						
Millions of 1982 Dollars	43,505	45,923	46,905	47,795	48,846	50,360
Percent Change	8.0	5.6	2.1	1.9	2.2	3.1
Personal Income						
Millions of Current Dollars	40,963	44,766	48,699	52,233	55,785	59,802
Percent Change	11.3	9.3	8.8	7.3	6.8	7.2
Retail Sales						
Millions of Current Dollars	16,169	17,187	18,001	18,855	19,892	21,006
Percent Change	9.7	6.3	4.7	4.7	5.5	5.6
Unemployment Rate (Percent)	6.5	6.9	6.3	6.3	6.4	6.2
Wage and Salary Employment						
Number in Thousands	1,278.6	1,337.8	1,385.8	1,410.6	1,435.2	1,470.9
Percent Change	8.2	4.6	3.6	1.8	1.7	2.5
Population						
Number in Thousands	3,205	3,330	3,430	3,507	3,584	3,670
Percent Change	4.0	3.9	3.0	2.2	2.2	2.4
Single-Family Units Permitted						
Number	33,271	34,079	27,360	22,791	18,689	19,997
Percent Change	7.8	2.4	−19.7	−16.7	−18.0	7.0
Multifamily Units Permitted*						
Number	37,312	27,008	12,038	8,853	6,197	6,383
Percent Change	−22.0	−27.6	−55.4	−26.5	−30.0	3.0

*Apartment complexes of three or more units

Source (Tables 1 and 2): Economic Outlook Center, College of Business, Arizona State University.

ice sector has created only 1.7 percent more jobs in 1989.

Losses continue in construction, aerospace, and finance, insurance, and real estate (FIRE). At mid-1989, these three sectors had seen the disappearance of a combined total of 6,500 jobs over the same period in the previous year.

Analysts often point out that the figures prepared by the Department of Economic Security are estimated by a sampling procedure and are subject to revision. Even with this caveat, however, it appears that 1989 is very likely to bring a lower rate of job creation than experienced last year.

The only employment indicator which seems to be significantly improved over last year at this time is the Arizona unemployment rate. At mid-year, the seasonally adjusted rate was 5.2 percent, down more than a full percentage point from the previous summer. However, the falling unemployment rate is itself a signal that people are leaving the state seeking better opportunities elsewhere. Workers leaving the state also contribute to the low levels of net migration recorded in recent quarters.

Arizona's estimated rate of population increase for the 12 months ending in June 1989 was 2.1 percent, with an estimated 35,000 net migrants and 38,000 natural increase (see *Arizona Business*, September, 1989, page 5).

TABLE 3

ARIZONA EMPLOYMENT FORECASTS
For 1989-1990 (thousands)

	1985	Percent Change	1986	Percent Change	1987	Percent Change	1988	Percent Change	1989	Percent Change	1990	Percent Change
Manufacturing	181.6	5.1	184.6	1.6	187.4	1.5	189.9	1.3	192.0	1.1	195.3	1.7
Mining	11.9	–9.2	11.0	–7.8	11.4	3.5	12.0	5.3	12.7	5.5	13.1	3.2
Construction	112.1	15.6	113.1	0.8	103.2	–8.7	93.9	–9.0	88.3	–6.0	88.7	0.5
TCPU*	62.9	5.2	66.0	4.8	71.7	8.7	72.7	1.4	73.9	1.6	75.2	1.8
Trade	311.4	8.7	326.3	4.8	340.3	4.3	347.5	2.1	359.7	3.5	368.7	2.5
FIRE**	81.0	12.3	88.9	9.8	94.5	6.3	93.3	–1.3	90.4	–3.1	90.7	0.3
Services	299.9	9.7	323.8	8.0	345.3	6.6	361.2	4.6	370.2	2.5	383.9	3.7
Government	218.1	5.1	225.0	3.2	232.0	3.1	240.3	3.6	248.1	3.2	255.5	3.0
Total Wage and Salary Employment	1,278.6	8.2	1,337.8	4.6	1,385.8	3.6	1,410.6	1.8	1,434.6	1.7	1,469.0	2.4
Total Employment	1,381.0	1.5	1,463.0	5.9	1,511.0	3.3	1,550.0	2.6	1,588.8	2.5	1,644.4	3.5
Total Unemployment	96.0	35.2	109.0	13.5	101.0	–7.3	104.0	3.0	109.9	5.7	113.5	3.3
Labor Force	1,477.0	3.1	1,572.0	6.4	1,612.0	2.5	1,654.0	2.6	1,698.7	2.7	1,758.2	3.5
Unemployment Rate		6.5		6.9		6.3		6.3		6.8		6.5

*Transportation, Communications and Public Utilities

**Finance, Insurance and Real Estate

TABLE 4

1989 AND 1990 ECONOMIC FORECASTS: MARICOPA COUNTY

	Actual *1985*	Actual *1986*	Actual *1987*	Actual *1988*	Forecast *1989*	Forecast *1990*
Consumer Price Index						
Percent Change	5.0	1.4	4.1	4.1	5.0	5.1
Retail Sales						
Millions of Current Dollars	10,829	11,342	11,743	12,223	12,895	13,617
Percent Change	11.2	4.7	3.5	4.1	5.5	5.6
Unemployment Rate (Percent)	5.1	5.6	5.2	5.1	5.2	5.0
Wage and Salary Employment						
Number in Thousands	842.4	882.6	913.8	931.3	948.1	970.9
Percent Change	9.1	4.8	3.5	2.0	1.8	2.4
Population						
Number in Thousands	1,826	1,910	1,976	2,021	2,066	2,120
Percent Change	5.6	4.6	3.4	2.3	2.2	2.6
Single-Family Units Permitted						
Number	23,143	23,851	18,012	14,734	11,787	12,589
Percent Change	11.4	3.1	–24.5	–18.2	–20.0	6.8
Multifamily Units Permitted*						
Number	27,271	18,311	9,106	6,160	4,004	4,104
Percent Change	–25.9	–32.9	–50.3	–32.4	–35.0	2.5

*Apartment complexes of three or more units

Source (Tables 3 and 4): Economic Outlook Center, College of Business, Arizona State University.

Real estate activity in the state through the first half was weaker than in the previous year. Resales of single-family homes in metropolitan Phoenix were down 12.5 percent for the first half.

Residential building was also down in the first half, with permits registering a 3.3 percent dip over the first half of the previous year. The 6,087 single-family units permitted in Phoenix was about half the number permitted in Las Vegas during the same period. Arizona multifamily activity plummeted in the first half to a level 67.3 percent below last year.

THE ARIZONA OUTLOOK

Figures available for the first half of 1989 leave little doubt that this year will, at best, barely measure up to last year in terms of those indicators that affect the Arizona economy in the real sense—variables such as jobs, population, and housing.

Overall employment growth will improve slightly in 1990, but will still be only about one-half the long term average growth rate, at 2.5 percent. Sectors providing most of the stimulus include trade, services, and government. Construction employment is expected to stabilize after bottoming out at about 88,000 jobs, a 25,000 job decrease from the average level of 1986.

The EOC Arizona forecast anticipates slightly lower interest rates during 1990 that should sustain — but not stimulate — the residential housing market. Single-family activity will be up 7 percent in 1990, to about 20,000 permits, still significantly lower than the mid-1980s.

The Maricopa County forecast parallels the Arizona forecast. Currently, the metropolitan Phoenix area accounts for about two out of three Arizona jobs. During 1990, employment in the metro Phoenix area will grow by 2.4 percent, according to the EOC outlook. Population will grow by 54,000 persons, with net migration of about 26,000 persons.

In spite of unspectacular growth figures, the state economy is not in recession. We are in the midst of a slow but positive growth period of uncertain length.

What is troubling about the current situation is that, without significantly lower interest rates, there are no forces on the horizon to change the Arizona growth picture for the intermediate term. Reduced interest rates, and particularly mortgage rates in the 8 percent range, would stimulate housing starts, immigration, and general growth in sectors that are now lagging such as finance and real estate. But until the Federal Reserve becomes convinced that inflation is whipped — or there is a period of sharply lower national economic growth — such a reduction in interest rates does not seem to be in the cards.

– **Lee R. McPheters,** *Director*
Economic Outlook Center

Arizona leading index up again in July

The Arizona Index of Leading Economic Indicators increased in July to 117.6. The July number was .26 percent higher than the revised 117.3 number for June 1989 and 2.4 percent below the July 1988 number of 120.5 (1982 = 100).

Money supply, production, and sensitive prices were positive influences. Residential building permits, hours worked in manufacturing, and new orders were negative influences. Delivery times and inventories were unchanged this month.

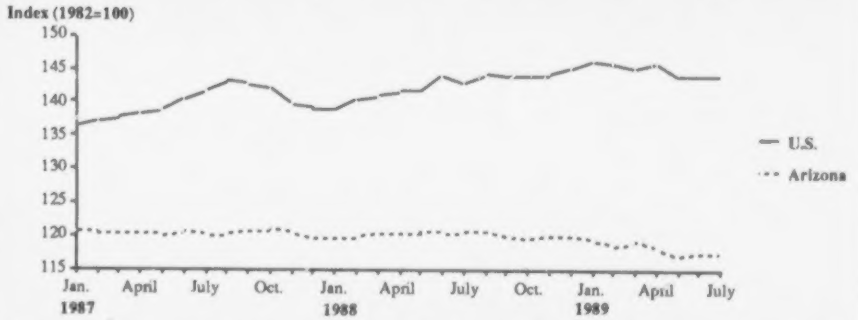
ANALYSIS

The U.S. economy continues to show surprising strength despite the advanced age of the current expansion and the pronouncements of all the doomsayers. However, Arizona has not enjoyed the same robust health over the last few years. Figure I highlights the different paths taken by the national and local economies. While the national leading index has been on an upward track during most of the last two and a half years, the Arizona leading index has been flat or dropping over the same period.

The U.S. economy as a whole has benefited from the boom in exports induced by the falling value of the dollar. The demand for U.S. goods has revitalized some declining areas of the country. Unfortunately, Arizona's industrial mix is such that there was very little export-induced increase in demand. At the same time, cutbacks in military spending have adversely affected many Arizona employers.

FIGURE I

ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University; sponsored by Citibank (Arizona).

The largest negative for the Arizona economy has been the construction slump. The boom went bust when tax reform removed most of the tax advantages that had propped up many projects. Arizona will feel the effects of the current slump for a long time as federal regulators deal with the dead and wounded of the Savings and Loan debacle. In the U.S. as a whole, the construction industry has had to deal with high interest rates, but without the complications of overbuilding.

OUTLOOK

The Arizona economy has done remarkably well, given the range and severity of the problems it has seen over the last few years. But, its currently weakened state leaves it very sensitive to what happens in the national economy. Recent statistics indicate that the national economy is doing better than expected, which is welcome news for Arizona.

– **Tracy L. Clark,** *Economist*
Economic Outlook Center

Construction is improved but still slow in 2nd quarter

After an anemic first quarter 1989, the Arizona construction industry rebounded during the second quarter from $951 million (17,182 permits) to $1.1 billion (19,638 permits). Construction activity, however, is still well below the $1.4 billion (22,296 permits) recorded during the second quarter of 1988.

While Maricopa County showed improvement from $706 to $804 million, its share of the state's activity declined from 74 to 72 percent. Pima County reported an increase in construction activity from $88 to $99 million, but its market share remained at only nine percent. In contrast, construction in the non-metropolitan areas showed strong improvement from $157 million in the first quarter to the current $213 million, swelling its share from 17 to 19 percent. Several counties recorded improved permitted activity over the first quarter, including Mohave ($56 to $63 million), Pinal ($6 to $11 million), Cochise ($4 to $14 million) and Coconino ($20 to $35 million).

More than 80 percent of the permitted activity in the state of Arizona occurred in the twelve areas listed in Table 1. Nearly 25 percent of the recorded activity in Phoenix was accounted for by two public office buildings ($46 million) and 27 educational permits ($35 million). While Lake Havasu City continued to lead the non-metropolitan areas, other communities also reported significant levels of activity, among them Bullhead City ($19 million), Flagstaff ($19 million), and Prescott ($12 million).

TABLE 1

REPORTING UNITS WITH GREATEST TOTAL VALUE OF BUILDING PERMITS
Second Quarter 1989

Reporting Unit	Value *(in millions)*
Phoenix	$359
Scottsdale	150
Mesa	64
Unincorporated Maricopa County	52
Unincorporated Pima County	47
Chandler	46
Tucson	41
Tempe	39
Lake Havasu City	28
Glendale	24
Gilbert	23
Peoria	23

Source: Arizona Real Estate Center, College of Business, Arizona State University.

RESIDENTIAL

Following a fairly typical pattern, single-family activity in Maricopa County posted a six percent increase over the first quarter (2,953 to 3,134 permits) but was down 28 percent from a year ago (4,347 permits). New development was most evident in Phoenix (914 permits), unincorporated Maricopa County (553 permits), and Scottsdale (313 permits).

In much the same way, Pima County's 37 percent increase (from 574 to 786 single-family permits) still fell far short of the 991 permits reported for a year ago. Oro Valley continued to be a strong area of activity, increasing from 86 to 109 permits. More than 65 percent of the permitted activity (509 permits) was in unincorporated areas, while 20 percent occurred in Tucson (155 permits).

With 1,529 issued permits, the single-family sector in the non-metropolitan areas was stronger than both the first quarter (1,151 permits) and a year ago (1,432 permits). New home development was very evident in Lake Havasu City (344 permits), Prescott (111 permits) and unincorporated Yavapai County (161 permits).

TABLE 2

KEY SECTOR CONSTRUCTION ACTIVITY
(Second Quarter 1989, First Quarter 1989, and Second Quarter 1988)

			COMMERCIAL							
	SINGLE FAMILY		APARTMENTS[a]		OFFICE BUILDINGS[b]		RETAIL STORES[c]		INDUSTRIAL	
	Number of Permits	*Dollar Value (000)*	*Number of Units*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*
Maricopa County										
2nd Quarter 1989	3,134	327,206	673	34,646	60	85,068	128	78,070	34	18,921
1st Quarter 1989	2,953	325,668	546	31,666	50	87,475	110	28,522	32	38,102
2nd Quarter 1988	4,347	413,813	2,888	138,715	61	70,289	231	134,766	32	14,573
Pima County										
2nd Quarter 1989	786	36,090	12	385	15	2,471	21	3,838	4	3,229
1st Quarter 1989	574	41,279	39	953	14	1,838	25	10,242	5	2,101
2nd Quarter 1988	991	68,616	397	15,094	20	5,570	14	1,331	10	5,738
Rest of Arizona										
2nd Quarter 1989	1,529	122,771	258	8,284	27	2,858	65	19,289	15	6,662
1st Quarter 1989	1,151	76,449	179	5,989	17	2,225	65	13,617	17	1,758
2nd Quarter 1988	1,432	98,426	190	5,513	36	3,434	81	27,855	22	2,442
Arizona Total										
2nd Quarter 1989	5,449	486,067	943	43,315	102	90,397	214	101,197	53	28,812
1st Quarter 1989	4,678	443,396	764	38,608	81	91,538	200	52,381	54	41,961
2nd Quarter 1988	6,770	580,855	3,475	159,322	117	79,293	326	163,962	64	22,753

[a] Five or more housing units
[b] Office, bank, medical and professional buildings
[c] Shopping centers and other mercantile buildings

Source: Arizona Real Estate Center, College of Business, Arizona State University.

COMMERCIAL

The office building sector in Maricopa County continued to show a good level of activity at $85 million, slightly under the first quarter's $87 million, and well above the $70 million reported a year ago. Most of the activity occurred in Phoenix ($57 million) and Scottsdale ($23 million). Tucson represented $2 million of the $2.5 million recorded in Pima County. No office building permit for over $1 million was issued in the rest of Arizona.

Retail development rebounded sharply in Maricopa County from $28 million in the first quarter to $78 million, but was well below the $135 million reported a year ago. Phoenix was the primary area of new retail activity with $36 million, followed by Scottsdale ($14 million), and Mesa ($9 million). Retail development in Pima County was mostly located in Tucson, which produced $3 million of the $3.8 million recorded in the county. The $19 million recorded in the rest of Arizona was an improvement over the $14 million issued during the first quarter, but fell short of the $28 million in new permits recorded a year ago. Retail activity was strongest in Sierra Vista ($3 million), Flagstaff ($6 million), and Bullhead City ($5 million).

The apartment sector continued to produce low levels of activity; only 673 units were permitted in Maricopa County, led by Chandler (284 units) and Scottsdale (189 units). Phoenix authorized only 18 units. Pima County had only 12 permitted units, all of them in Tucson. In contrast, the apartment sector improved in the rest of Arizona, especially in unincorporated Apache County (55 units), Flagstaff (82 units), and Yuma (36 units).

The hotel/motel sector improved from $8 million in first quarter to $21 million, with its strongest activity in Flagstaff ($2 million), Williams ($2 million), and Phoenix ($18 million).

INDUSTRIAL AND OTHER

After a strong first quarter ($38 million), industrial activity in Maricopa County declined to $19 million. The primary areas of activity were Phoenix ($8 million), Tempe ($6 million), and unincorporated Maricopa County ($4 million). One permit was issued by Marana, in Pima County, for $3 million. Significant industrial activity was also reported in Casa Grande ($3 million), and Flagstaff ($1 million).

New educational facilities continued to be a strong source of activity with a reported $50 million in the second quarter, particularly in Eager ($3 million), Phoenix ($36 million), unincorporated Navajo County ($4 million), and Benson ($1 million). As noted, permits for public office buildings were issued for a city building in Phoenix ($25 million), and for the state ($21 million).

LOOKING AHEAD

Although construction activity improved during the second quarter, the year-to-date total of $2.1 billion is still below the $2.4 billion recorded during the first half of 1988. Further, the driving forces consisted of improvements in the non-metropolitan areas, especially Mohave and Coconino counties, and public projects in Maricopa County. While these forces can provide the basis for maintaining current construction activity, they are not sufficient to propel the industry beyond that.

The most positive note is the relative improvement reported for the non-metropolitan areas. This pattern is frequently evident when development activity slows in metropolitan areas. Basically, developers are taking advantage of many previously overlooked opportunities driven by growing economies and population in the non-metropolitan areas. Much of that

TABLE 3

ARIZONA HOUSING UNITS AUTHORIZED
Second Quarter 1989

	One Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total*
APACHE COUNTY	20	15	0	0	55	90
Percent Change, Previous Year	-9	-32	—	—	—	105
Percent Change, Previous Qtr.	82	88	—	—	—	374
COCHISE COUNTY	70	164	0	0	24	258
Percent Change, Previous Year	-43	925	—	—	—	86
Percent Change, Previous Qtr.	17	62	—	—	—	60
COCONINO COUNTY	157	83	10	8	82	340
Percent Change, Previous Year	-10	-21	-38	-67	14	-13
Percent Change, Previous Qtr.	96	84	0	-62	-21	31
GILA COUNTY	53	60	0	0	0	113
Percent Change, Previous Year	-16	-8	—	—	—	-12
Percent Change, Previous Qtr.	13	54	—	—	—	28
GRAHAM COUNTY	17	50	0	0	0	67
Percent Change, Previous Year	-11	-26	—	—	—	-23
Percent Change, Previous Qtr.	21	-4	—	—	—	2
GREENLEE COUNTY	0	0	0	0	0	0
Percent Change, Previous Year	—	—	—	—	—	—
Percent Change, Previous Qtr.	—	—	—	—	—	—
LA PAZ COUNTY	0	0	0	0	0	0
Percent Change, Previous Year	—	—	—	—	—	—
Percent Change, Previous Qtr.	—	—	—	—	—	—
MARICOPA COUNTY	3,134	15	2	15	673	3,839
Percent Change, Previous Year	-28	-88	-96	-83	-77	-49
Percent Change, Previous Qtr.	6	-82	—	36	23	7
MOHAVE COUNTY	542	309	12	8	29	900
Percent Change, Previous Year	50	25	200	—	-55	33
Percent Change, Previous Qtr.	25	2	-33	0	-57	9
NAVAJO COUNTY	93	33	0	0	6	132
Percent Change, Previous Year	0	-13	—	—	—	1
Percent Change, Previous Qtr.	138	18	—	—	—	97
PIMA COUNTY	786	125	14	6	12	943
Percent Change, Previous Year	-21	495	17	0	-97	-34
Percent Change, Previous Qtr.	37	681	40	—	-69	48
PINAL COUNTY	37	60	0	0	12	109
Percent Change, Previous Year	-58	-33	—	—	—	-39
Percent Change, Previous Qtr.	-27	-23	—	—	—	-18
SANTA CRUZ COUNTY	91	1	2	0	6	100
Percent Change, Previous Year	25	-67	—	—	-25	11
Percent Change, Previous Qtr.	10	-99	0	—	—	-49
YAVAPAI COUNTY	339	81	8	7	8	443
Percent Change, Previous Year	-9	-46	0	-77	-80	-26
Percent Change, Previous Qtr.	23	-36	300	-50	0	4
YUMA COUNTY	110	83	0	4	36	233
Percent Change, Previous Year	22	-24	—	—	177	10
Percent Change, Previous Qtr.	6	-27	—	—	—	7
TOTAL, ARIZONA	5,449	1,079	48	48	943	7,567
Percent Change, Previous Year	-20	-3	-44	-69	-73	-35
Percent Change, Previous Qtr.	15	-4	0	-11	23	13

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

growth is based on tourism and retirees.

Even though the population and the economy of Arizona are still growing, this growth is not sufficient to support significant levels of new activity while filling the existing space. Hence, there appears little on the horizon to provide stimulation to the construction industry. If interest rates would again decline, the single-family sector could improve over the next few quarters. Since the apartment sector has slowed so appreciably, it could rebound slightly, especially in the non-metropolitan areas, but not near the levels of the mid-1980s. Increasing concern about the office building and retail sectors in Maricopa County suggests that these sectors are expected to decline from the current levels. While Pima County has improved, its slow economic activity problems will hamper new development in the area, especially in the commercial and industrial sectors.

In the absence of clearly discernable trends that could force the industry to radically change (up or down) from its current, lethargic pattern, construction activity is expected to remain slow and uneven as developers search for market opportunities throughout Arizona. While the 1989 pace remains below that of the recent past few years, 1989 is expected to continue at near-current levels, and should end as a good year, but not a particularly strong or positive one.

– Jay Q. Butler

Dr. Butler is Associate Professor of Real Estate and Director of the Arizona Real Estate Center in the ASU College of Business.

TABLE 4

ARIZONA BUILDING PERMITS
Second Quarter 1989

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*
APACHE COUNTY	59	1,622	2	1,854	0	0	11	3,645	72	7,121
Percent Change, Previous Year	-6	-10	100	2,372	—	—	120	7,824	4	270
Percent Change, Previous Qtr.	119	124	-33	997	—	—	120	560	106	393
COCHISE COUNTY	488	7,457	34	4,498	0	0	194	1,944	716	13,899
Percent Change, Previous Year	80	12	17	19	—	—	-1	65	44	20
Percent Change, Previous Qtr.	67	74	143	307	—	—	24	443	55	142
COCONINO COUNTY	491	17,200	81	14,204	4	2,208	108	897	684	34,509
Percent Change, Previous Year	-4	-19	59	110	300	12,167	-39	-22	-8	18
Percent Change, Previous Qtr.	118	78	84	69	300	—	30	-49	94	74
GILA COUNTY	234	6,201	14	890	0	0	26	556	274	7,647
Percent Change, Previous Year	-6	0	-13	11	—	—	-59	-13	-17	-2
Percent Change, Previous Qtr.	31	42	8	-82	—	—	30	562	30	-18
GRAHAM COUNTY	113	1,797	12	217	1	250	26	1,650	152	3,914
Percent Change, Previous Year	-26	-17	300	19	—	—	73	746	-11	54
Percent Change, Previous Qtr.	10	22	50	-27	0	—	-7	1,713	9	111
GREENLEE COUNTY	1	0	0	0	0	0	5	2	6	2
Percent Change, Previous Year	—	—	—	—	—	—	—	—	—	—
Percent Change, Previous Qtr.	—	—	—	—	—	—	—	—	—	—
LA PAZ COUNTY	5	18	1	7	0	0	1	14	7	39
Percent Change, Previous Year	-94	-98	-83	-92	—	—	-96	-86	-94	-97
Percent Change, Previous Qtr.	-86	-97	0	-72	—	—	-96	-83	-89	-94
MARICOPA COUNTY	5,145	347,382	676	251,134	34	18,921	4,318	186,233	10,173	803,670
Percent Change, Previous Year	-25	-21	-11	-33	6	30	-27	-12	-25	-23
Percent Change, Previous Qtr.	3	1	78	52	6	-50	9	18	9	14
MOHAVE COUNTY	1,285	44,817	60	15,105	4	355	498	2,950	1,847	63,227
Percent Change, Previous Year	24	51	36	113	100	583	18	4	23	60
Percent Change, Previous Qtr.	18	24	13	71	300	-63	58	-72	26	11
NAVAJO COUNTY	358	8,965	18	2,388	2	282	71	4,396	449	16,031
Percent Change, Previous Year	4	17	-5	-32	0	-60	37	1,863	8	32
Percent Change, Previous Qtr.	103	172	80	661	-60	19	173	414	107	241
PIMA COUNTY	1,687	60,164	58	10,021	4	3,229	1,235	25,946	2,984	99,360
Percent Change, Previous Year	-13	-20	-15	-56	-60	-44	-7	-22	-11	-27
Percent Change, Previous Qtr.	34	30	-3	-50	-20	54	5	37	19	13
PINAL COUNTY	245	4,872	54	1,371	1	2,841	199	1,666	499	10,750
Percent Change, Previous Year	-24	-48	32	-86	-89	239	-1	-56	-13	-55
Percent Change, Previous Qtr.	-36	-18	2	70	-88	1,041	-24	84	-29	36
SANTA CRUZ COUNTY	101	3,039	3	53	0	0	14	88	118	3,180
Percent Change, Previous Year	22	67	-67	-84	—	—	133	1,157	20	47
Percent Change, Previous Qtr.	-53	-15	200	130	—	—	0	-65	-49	-17
YAVAPAI COUNTY	893	30,403	40	1,764	3	726	181	4,784	1,117	37,677
Percent Change, Previous Year	2	-10	-2	-79	-25	38	-36	-58	-7	-31
Percent Change, Previous Qtr.	34	24	-29	-57	-40	239	-9	-28	21	7
YUMA COUNTY	306	10,634	28	3,335	0	0	206	1,922	540	15,891
Percent Change, Previous Year	7	21	12	-42	—	—	-9	-41	0	-11
Percent Change, Previous Qtr.	-23	-2	27	329	—	—	-37	-38	-28	7
TOTAL, ARIZONA	11,411	544,571	1,081	306,841	53	28,812	7,093	236,693	19,638	1,116,917
Percent Change, Previous Year	-13	-16	-3	-31	-17	27	-20	-12	-15	-19
Percent Change, Previous Qtr.	14	10	51	42	-12	-31	8	17	13	17

*Includes mobile homes.

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

Arizona housing affordability varies by county

The affordability of housing in Arizona varies considerably across the state's counties, because each county differs in terms of its residents' incomes as well as home prices and the types of homes built.

Affordability is typically defined as the ability of a household to meet the cash flow payments required to own a median-priced home. This standard is frequently measured by an affordability index, which is a benchmark that can be used to show how affordability changes over time.

Housing affordability is highest in Greenlee County, where the median income is the state's highest and the median home price is the lowest. Affordability is lowest in La Paz County, which has the lowest median income of the Arizona counties, but only the fifth-lowest home prices.

When comparing housing affordability across counties, it must be remembered that the index is only a benchmark based on stated assumptions, the price of homes currently available and the income of the current residents given the jobs available to them. A resident of one county cannot simply move to another county which enjoys higher affordability and expect to benefit, without considering the type of job and income which would be available in the new location, as well as the type and size of housing available and its level of amenities.

An index value of 100 or more indicates that a median-income household can qualify for a median-priced home, assuming a 15 percent down-payment on a fixed-rate conventional mortgage and a FNMA income qualification factor of 28 percent. Affordability can vary substantially if the assumptions are altered, although the rank-

TABLE 1

AFFORDABILITY INDEXES FOR ARIZONA COUNTIES, 1988
(Single-family Homes Only)

County	Median Sales Price	Mortgage Interest Rate	Loan Amount	Principal, Interest, Taxes, Insurance	Median Gross Monthly Income	Index A	Affordability Indexes With One Assumption Changed From Index A						
							B	C	D	E	F	G	H
Apache	$60,000	10.8%	$51,000	$560	$1,640	82	77	73	68	89	74	90	81
Cochise	62,000	10.8	52,700	580	1,840	89	84	79	74	96	81	98	86
Coconino	79,950	10.8	67,958	750	2,430	91	86	81	76	98	82	100	88
Gila	55,000	10.8	46,750	520	2,010	109	103	97	91	118	99	120	82
Graham	50,000	10.8	42,500	470	1,720	103	97	92	86	112	93	113	101
Greenlee	36,750	10.8	31,238	340	2,890	235	222	210	196	255	214	259	246
La Paz	58,500	10.8	49,725	550	1,510	77	73	69	64	84	70	85	61
Maricopa	85,000	10.8	72,250	800	2,880	101	95	90	84	110	92	111	108
Mohave	60,000	10.8	51,000	560	1,790	89	84	80	74	97	81	98	82
Navajo	55,000	10.8	46,750	520	2,400	130	123	117	109	142	119	144	105
Pima	75,000	10.8	63,750	700	2,250	90	85	80	75	98	82	99	90
Pinal	48,000	10.8	40,800	450	1,980	123	116	110	103	134	112	135	105
Santa Cruz	67,500	10.8	57,375	630	2,190	97	92	87	81	105	88	107	102
Yavapai	65,000	10.8	55,250	610	1,880	86	81	77	72	94	78	95	77
Yuma	61,000	10.8	51,850	570	1,850	91	86	81	75	98	82	100	85
Arizona	79,000	10.8	67,150	740	2,530	95	90	85	80	104	87	105	95
U.S.	92,800	10.7	78,880	870	2,670	86	82	77	72	94	79	95	NA

Index A shows the affordability index for the assumptions in the table above (such as price, interest rate and income). Other assumptions include a 15 percent downpayment on a 30-year loan with a 15 percent estimate for taxes and insurance and a FNMA qualification factor of 28 percent. Indexes B through H show the index after one of these assumptions have been changed; all other assumptions are the same as in column A. The altered assumption for each column is listed in the footnotes below.

Assumptions altered for indexes B through H:
B – 10 percent down payment
C – 25 percent FNMA qualification factor
D – 15-year loan term
E – Mortgage rate lowered by 1 percent
F – Sales price increased by 10 percent
G – Income increased by 10 percent
H – The median home size is held constant in each county to adjust for size differences – the median square footage for Arizona (1,440 s.f.) was multiplied by the median price-per-square-foot in each county to determine the sales price. This index shows what the affordability level would be in the county for a home the size of the median home in Arizona.

Source: Arizona Real Estate Center, College of Business, Arizona State University. Interest rates are from *Federal Home Loan Bank Board News*; income is from *Sales and Marketing Management*; national home prices are from U.S. Bureau of the Census and National Association of Realtors.

ing of the counties would change only if incomes or home prices changed more in one county than in others.

COUNTY COMPARISONS

As shown in Table 1, affordability varies considerably across the state, and housing in most Arizona counties has been more affordable than nationally. The Arizona 1988 index value of 95 means a household that earned the median gross monthly income of $2,530 had 95 percent of the income required to qualify for the purchase of the median-priced home ($79,000).

Affordability varies among the various Arizona counties due to varying incomes and home prices. Counties influenced by mining, such as Greenlee, Navajo, Pinal, and Gila, had the highest levels of affordability. Greenlee County had the highest income ($2,890 monthly), while Apache County reported the lowest monthly income ($1,640). Homes were highest-priced in Maricopa County ($85,000), and were lowest-priced in Greenlee County ($36,750).

Care must be taken in the interpretation of this index for each county. For example, Mohave and Yavapai Counties have low affordability indexes, due to low incomes ($1,800 per month). However, both counties have a high percentage of retired people, who have low incomes but frequently have more wealth than younger households. On the other hand, Greenlee County has a very high index value due to the influences of a historically inexpensive housing market coupled with higher paying mining jobs. In some other counties such as Coconino and Gila, seasonal housing could influence the index value. Another consideration is that some counties have a limited resale market, a condition which can produce wide swings in annual sales activity, median sales values, and the resulting index values.

An alternative way to compare affordability levels between areas is to hold the size of the home constant in each county, determining affordability from the median price-per-square-foot for homes in that individual county. This method takes into account the size of the homes sold and their amenity levels. The sales price for each county is determined by multiplying the median square footage for all homes in Arizona (1,440 square feet) by the median price-per-square-foot for homes sold in that individual county. The results of this method are shown in Table 1, Column H.

TABLE 2

AFFORDABLE HOME PRICE AND MONTHLY PAYMENT
By Level of Income
(Effective Interest Rate of 10.8 Percent)

Gross Monthly/Annual Income	Sales Price	Monthly Housing Payment	Affordability Index
$1,675/$20,000	$50,050	$470	100
$2,075/$25,000	62,250	580	100
$2,500/$30,000	74,675	700	100
$2,925/$35,000	87,125	820	100
$3,325/$40,000	99,575	930	100
$3,750/$45,000	112,025	1,050	100
$4,175/$50,000	124,475	1,170	100
$6,250/$75,000	186,725	1,750	100
$8,325/$100,000	248,950	2,325	100

Source: Arizona Real Estate Center, College of Business, Arizona State University.

Except for Greenlee County, which emerged on the high side, and La Paz County, which was low, the counties congealed into two groups with similar levels of affordability. Maricopa, Navajo, Pinal, Santa Cruz, and Graham Counties all had affordability levels between 101 and 108. Index levels of all other counties (except Greenlee and La Paz) ranged between 77 and 90. The variation in the counties was not as large as when the standard index was used, illustrating the differences in size and the level of amenities included in the home prices.

AFFORDABILITY UNDER CHANGING ASSUMPTIONS

Even though the index is only a benchmark given certain assumptions, the assumptions can be varied to meet different market conditions. Columns B through H in Table 1 show the results when one assumption is altered, leaving all others as in the original index A.

A higher down payment, lower mortgage rates, lower sales prices, or higher incomes would all improve the affordability levels of all counties, but would not change the relative ranking of any county. However, a higher down payment essentially improves affordability by lowering the loan amount, and buyers must have more savings to pay the larger down payment.

A lower down payment, more stringent FNMA qualification factors, a shorter loan term, higher mortgage rates, higher sales prices, or lower incomes would lower affordability levels, resulting in fewer buyers able to afford the median priced home.

AFFORDABILITY BY INCOME LEVEL

The affordability levels so far have assumed that a household earns the median income. Of course, most people do not earn this amount — half earn more and half earn less. A better idea of affordability for a specific household can be obtained by varying the income, while holding all other factors constant (see Table 2).

For example, a household earning $25,000 annually could still afford a home, but the price would be closer to $62,250. A household earning around $32,000 annually could afford the median-priced Arizona home of $79,000, while an income closer to $37,000 would be needed to afford the median-priced U.S. home of $92,800.

OUTLOOK

Mortgage interest rates will continue to remain the key to housing affordability. Rates will probably not change significantly in the near future, so little change is likely in affordability. Home prices are expected to remain soft during the balance of 1989, due to the competitive real estate market. When the real estate market recovers from its current slump, both prices and incomes should rise more quickly than during 1989, but mortgage rates will still be the primary determinant in the level of housing affordability.

– **Sharla Kivett,** *Research Analyst*
Arizona Real Estate Center

Agriculture census documents industry's difficulties

The average value of agricultural land and buildings, as well as the market value of agricultural products, all declined in Arizona on an inflation-adjusted basis between 1982 and 1987, according to the 1987 Census of Agriculture, one of the economic censuses conducted every five years by the U.S. Bureau of the Census. These large real declines in value are an indication of the problems encountered by Arizona's agricultural industry through much of the 1980s.

CHARACTERISTICS OF AGRICULTURAL OPERATIONS

Nearly 7,700 farms and ranches (hereafter referred to as farms) were operating in Arizona in 1987, according to the broad definition used in the census: all operations that typically produce at least $1,000 worth of agricultural products in a year. A large number of small operations for which farming is not the main occupation are thereby included; this amounted to nearly one-half of the 7,669 operations in 1987. Further, nearly one-half of the farms operated on fewer than 50 acres.

The number of farms increased 5 percent between the 1982 and 1987 censuses, but this resulted almost entirely from a 10 percent gain in farms of less than 10 acres. Not even one-half of the operations had harvested cropland in 1987; only slightly more had irrigation. Most of the rest were strictly ranching operations.

One-half (36.3 million acres) of the land in Arizona is considered agricultural; this includes public lands on which ranches possess grazing rights. However, 82 percent of this land is considered rangeland and only 4 percent is called cropland. Even less than 4 percent was irrigated or harvested in 1987. Because of a relatively few ranches with massive grazing rights, the average size of an agricultural operation was more than 4,700 acres, even though only 844 operations were of 2,000 acres or more.

Most operations (70 percent) were individually or family-run, though this number declined slightly between 1982 and 1987. All other types of ownership increased, but less than 10 percent of all operations were owned by corporations. More than one-half of the operators worked off the farm part of the year; about 40 percent worked more than 200 days — essentially full time — elsewhere. The average age of an operator was 51.5, up one year since 1982.

Nearly half of all operations owned cattle and calves, but the number of such farms declined between 1982 and 1987, as did the number of cattle (1.11 million in 1987). Comparatively few had other types of livestock. The most common crops were cotton, hay, and fruits and nuts from orchards, though the acreage devoted to wheat and vegetables was greater than that of orchards. For most crops, the number of farms growing the crop and the acreage grown fell between 1982 and 1987.

VALUES

The average value of land and buildings per farm was $1.32 million, down 12 percent between 1982 and 1987. The per acre value was $279, down 4 percent. Those declines were even greater on a real basis, with inflation totaling 19 percent during these five years.

Though the average value exceeded $1.3 million, only 18 percent of the farms were valued at $1 million or more. One-third had land and buildings valued at less than $100,000. In contrast, the value exceeded $5 million on 4 percent of the farms. The average value of machinery per farm was $55,700.

The market value of agricultural products sold in 1987 exceeded $1.63 billion, an increase of 7 percent from 1982 before inflation. The average market value per farm was $212,400, nominally up 2 percent. More than one-half of the farms had a value of products sold of less than $10,000; nearly three-fourths sold products worth less than $50,000. In contrast, 4 percent had sales of more than $1 million.

Crop values were up 11 percent to $897 million in 1987, led by a 19 percent increase since 1982 in vegetables and melons (to $241 million). At $362 million, cotton and seed remained the largest crop, but the value barely increased from 1982. The value of livestock sold in 1987 was $732 million.

OTHER FINANCES

Production expenses totaled $1.30 billion in 1987. Only the farm labor expense rose from 1982 levels; this increase exceeded the overall inflation rate. Expenses were flat or lower in every other category. On average, the biggest expenses were for livestock, feed for livestock, and hired farm labor. The average production expense per farm was $170,000, but it was less than $10,000 on one-half of the farms and more than $500,000 on 6 percent.

Government payments of $58 million were made in 1987 to nearly 1,200 farms, an average of $48,600 per farm. However, the bulk went to 379 farms that received at least $50,000 each. Commodity Credit Corporation loans were held by 242 farms, totaling $13.5 million. Each figure was lower than in 1982.

The net cash return from agricultural sales averaged $40,000 in 1987. However, more farms lost money than gained. For those farms with less than $10,000 of sales, the net cash return averaged a negative $3,700. Only 14 percent of all farms (1,040) gained a net of $50,000 or more.

BY COUNTY

The number of farms was distributed more evenly across the state than was the population, though Maricopa County still led with more than 2,300 agricultural operations, 30 percent of the state total. The average size ranged widely by county, inversely corresponding to the percentage of operations that grow crops. The smallest average size was in Yuma and Maricopa counties. The per acre value of land and buildings also reflected the percentage of crop-growing operations, with the value in Yuma County twice as high as in La Paz and Maricopa counties, which had values much higher than in all other counties.

The average market value per farm was highest in La Paz, Yuma and Pinal counties. Maricopa County's value was not as great because of the large number of small part-time farms located in the Phoenix area. Expenses per farm closely followed market value.

SUMMARY

Most of the of agricultural products in Arizona are produced by relatively few farming and ranching operations. The large number of small, part-time operations included in the statistics tend to skew the census results.

Comparing the results of the 1982 and 1987 censuses reveals the difficulties the industry underwent in Arizona through most of the 1980s. The value of land and buildings dropped even before considering inflation. The market value of products sold declined on an inflation-adjusted basis, but so did production expenses.

– Tom R. Rex
Research Manager

Coincident index: Economy lost ground in June

Declines were measured in each of the coincident economic indexes in June. In Maricopa County, the 0.4 percent decrease, which put the index at 149.8 (1982=100), followed a strong gain in May. Elsewhere in the state, however, the declines were larger and followed modest gains in May. The Pima County index fell 1.1 percent to 135.6; the index for non-urban Arizona dropped 0.9 percent to 131.9.

Employment declined and the unemployment rate rose in all areas of the state in June. Conditions were mixed for the two other index components; both retail sales and commercial building permit valuations rose in the Phoenix area, but fell in the Tucson area. In rural Arizona, retail sales gained, but the building permits component decreased.

Though well below its long-term average, economic growth in Maricopa County led the state both in the second quarter and during the first half of the year. This mostly resulted from improvements in employment and unemployment, though employment gains have been small since late 1987 (see Figure I). The components of the non-urban Arizona index performed comparably to those of the Phoenix area index during the first six months of 1989, except that employment posted no net change during that period.

The coincident index declined in Pima County during both of the first two quarters of 1989, with poorer performance in each of the components compared to the Phoenix area. Each component had a net negative impact on the Tucson area index. The Tucson economy's weakness since the beginning of 1988 has been such that neither employment nor the coincident index was as high in June as at the end of 1987.

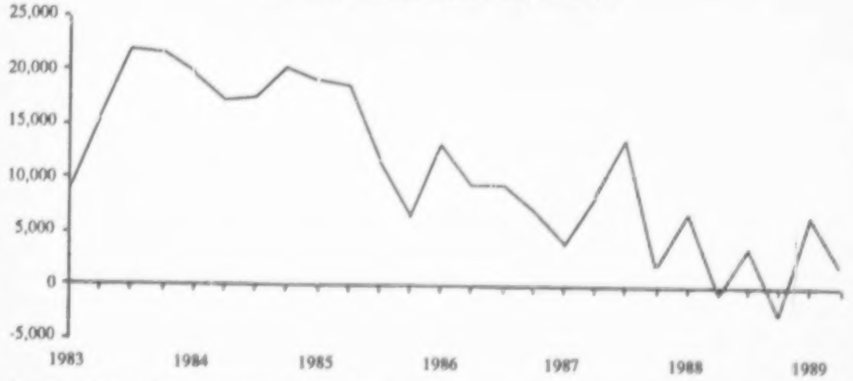
Following a 0.9 percent increase in May, the composite index for the state as a whole declined 0.6 percent in June, to 144.1.

A preliminary look at July data indicates little change in the indexes, except perhaps in the rural counties, where employment appears to have recovered June's loss.

– Tom R. Rex
Research Manager

FIGURE I

Wage and Salary Employment, Maricopa County
Seasonally Adjusted Quarterly Change



Source: Center for Business Research, College of Business, Arizona State University.

August purchasing indicators show continued weakness

The Arizona economy grew progressively weaker in August, as new order receipts — the driving force behind economic growth — tailed off. Both production and employment registered a lackluster performance as a result of the new order decline. The good news is that the inflation rate continues to come down, and inventories are well under control.

Prices paid for purchased items went up again in August, but at the smallest rate since January 1987. Delivery time on shipments from vendors continued to stretch out at a rate somewhat greater than in June or July. While lead times lengthened in each of the months this year, the increase rates have been under those of 1988, showing that the economy is growing at a slower rate.

Improvements in Arizona's economic performance will be hard to come by, and the economy likely will continue to be sluggish in the second half. However, the lower inflation rate and the control being exercised over inventories indicate that we probably will avoid anything more serious than a shallow and short economic pause.

TABLE 1

AUGUST PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (August compared to July)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	27	66	7
Delivery time from vendors	27	66	7
Purchased materials inventory level	22	48	30
New orders received	26	39	35
Production	26	47	27
Employment	20	61	19
Purchases	28	35	37

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona and the Northern Arizona Group.

– Harold Fearon
Dr. Fearon is Director of the Center for Advanced Purchasing Studies at Arizona State University.

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Year-to-Date Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	4th Qtr.	61.103	1.7	5.0	NA	NA
Arizona - 1982 Dollars	4th Qtr.	48.005	0.0	0.9	NA	NA
COINCIDENT ECONOMIC INDEXES (1982 = 100)						
Arizona	June	144.1	-0.6	3.1	NA	NA
Metropolitan Phoenix	June	149.8	-0.4	3.0	NA	NA
Metropolitan Tucson	June	135.6	-1.1	2.6	NA	NA
Non-urban Arizona	June	131.9	-0.9	4.3	NA	NA
CONSUMER PRICE INDEX (1982-84 = 100)						
Metropolitan Phoenix	2nd Qtr.	125.9	1.8	5.0	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1982 = 100)						
Arizona	July	117.6	0.3	-2.4	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	June	348,677	37	10	1,508,644	-14
Pima County	June	38,233	8	-27	186,908	-31
Balance of State	June	77,928	21	2	378,705	4
Arizona	June	464,838	31	4	2,074,257	-13
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	June	1,320	-6	-50	7,431	-39
Pima County	June	377	8	-40	1,582	-52
Balance of State	June	1,039	38	0	5,303	1
Arizona	June	2,736	8	-37	14,316	-31
HOME SALES						
Maricopa County - Number	July	4,590	23	-3	27,130	-7
Maricopa County - Median Price	July	82,200	-0.9	0.2	80,100	0.1
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	2nd Qtr.	90	2.3	-3.2	NA	NA
Metropolitan Phoenix - Resale Homes	2nd Qtr.	119	-3.4	-0.8	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	August	9.9	0.0	-6.6	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	2nd Qtr.	2,059	0.5	2.2	NA	NA
Arizona	2nd Qtr.	3,570	0.6	2.2	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	June	4,258	12.8	1.4	21,316	6.1

NA = Not Applicable

Source: Center for Business Research, Arizona Real Estate Center, and Economic Outlook Center, College of Business, Arizona State University.

ARIZONA BUSINESS

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